

# On the South African *Cucullia* (Noctuidæ)

by

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This group of *Noctuids* belongs to the tribe *Trifini*, which has M2 of the hindwing more or less obsolescent and from middle of DC or from just below middle. The *Cucullia* are distinguished from allied sub-tribes by having smooth eyes (hairy in the *Hadenæ*), mid- and hindtibiæ without spines (with spines, or at least with the hindtibiæ so, in the *Agrotides*), and the eyes with overhanging eyelashes (not present in the *Acronictæ*).

This last character is somewhat difficult to observe, as the hairs are sometimes rather short or somewhat hidden by the frontal hairs or scales and mistakes have been made in cases where other characters were neglected. One case in point may be mentioned here, namely *Ectocheila nigrilineata*, which I now find to be a typical *Centrarthra* in every respect, especially according to the male genitalia, and even in respect of the tuft which overhangs the eye.

As the name indicates, the typical genera such as *Cucullia* and the genera close to it, have the tegulæ produced, thus forming a more or less distinct hood; however, many genera placed here do not even show a distinct ridge or crest on the prothorax.

In two genera the foretibiæ have a terminal claw, which may be somewhat hidden in the hairs; a minute drop of benzine or toluol placed on the spot renders it quite distinct (when present) as a brownish, pointed, curved process. The proximal joints of the foretarsi sometimes have a series of short, curved, clawlike spines which must not be confused with the tibial claw.

Members of this group are found all over the world, but are comparatively lightly represented in South Africa. Many of the South African species, especially those of *Cucullia*, have very obscure markings which make it easy to confuse them, but a study of the male genitalia makes determination quite certain, even of species hardly separable by wing markings.

## KEY TO THE GENERA.

- 1a. Foretibia with a strong, curved claw at extremity ..... 2.
- b. Foretibia without a claw ..... 3.
- 2a. Tegulæ produced, so as to form a hood; cilia, overhanging the eyes, spreading ..... *Copicucullia*, p. 112.

- b. Tegulae not produced; overhanging cilia form a distinct tuft, not spreading ..... *Ectocheila*, p. 121.
- 3a. Frons with a corneus, truncate prominence, partly hidden in the scales ..... *Gramnoscelis*, p. 130.
- b. Frons smooth, rounded ..... 4.
- 4a. Tegulae produced to form a more or less distinct hood ..... 5.
- b. Tegulae not produced ..... 7.
- 5a. Abdomen with at least one dorsal crest ..... 6.
- b. Abdomen without any crests ..... *Empusada*, p. 101.
- 6a. Forewing with termen rather oblique, apex somewhat produced; R3 anastomosing with terminal half of stalk R4, R5; M1 from areole; hindwing with M3 and C1 from a point; C2 obsolescent; hood pronounced ..... *Cucullia*, p. 82.
- b. Forewing with termen less oblique and apex not produced; R3 only anastomosing with free part of R4; M1 remote from areole; hindwing with M3 and C1 remote; C2 very weak but present; hood rather small ..... *Neocucullia*, p. 108.
- 7a. Proboscis well developed ..... 11.
- b. Proboscis rudimentary ..... 8.
- 8a. Antennae of male bipectinate; forewing rather broad at termen, costa straight or arched ..... 9.
- b. Antennae of male biserrate; forewing with costa somewhat concave; tornus well rounded into termen and inner margin, making the wing rather narrow ..... *Ulochlæna*, p. 116.
- 9a. Thorax clothed hair only and without crests ..... *Dasypolia*, p. 130.
- b. Thorax clothed with hair and with scales or hair-like scales mixed, also with spreading crests ..... 10.
- 10a. Thorax with rough hair and scales mixed; termen of forewing crenulate; hindwing with RS and M1 very shortly stalked ..... *Rhodochlæna*, p. 113.
- b. Thorax with hair and hair-like scales mixed; termen of forewing almost even; hindwing with RS and M1 well separated ..... *Leucochlæna*, p. 115.
- 11a. Abdomen without any dorsal crests ..... *Caffristis*, p. 124.
- b. Abdomen with at least one dorsal crest ..... 12.
- 12a. Abdomen with a dorsal crest at base only ..... 13.
- b. Abdomen with more than one dorsal crest ..... 14.
- 13a. Prothorax with divided crests; frons with a transverse ridge of scales ..... *Charidea*, p. 119.
- b. Pro- and meta thorax without crests; frons roughly scaled, but without transverse ridge ..... *Hypotype*, p. 127.
- 14a. Thorax clothed with hairs and scales mixed ..... *Eumichtis*, p. 126.

- b. Thorax clothed with hairs and hair-like scales mixed .....  
 ..... *Rhizotype*, p. 130.

**KEY TO THE SPECIES, of which the males have been studied,  
 according to their genitalia.**

- 1a. Uncus with a hooked lobe on upper side .....  
 ..... *Neocucullia albisignata*, p. 111.  
 b. Uncus without a hooked lobe on upper side ..... 2.  
 2a. Uncus with two lateral at apical half .....  
 ..... *Hypotype scotomista*, p. 129.  
 b. Uncus without any lobes ..... 3.  
 3a. Base of abdomen with two lateral coremata, covered with long  
 hairs hidden in pockets ..... 4.  
 b. Base of abdomen without lateral coremata ..... 10.  
 4a. Vesica with two cornuti ..... 7.  
 b. Vesica with more than two cornuti ..... 5.  
 5a. Vesica with four cornuti ..... *Cucullia nigrilinea*, p. 88.  
 b. Vesica with three cornuti ..... 6.  
 6a. Harpes of both valves of even length *Cucullia minuta*, p. 87.  
 b. Harpe of right valve very long and curved, of left valve practi-  
 cally absent ..... *Cucullia inæqualis*, p. 82.  
 7a. Harpe narrow, long and straight ..... 8.  
 b. Harpe curved towards tip or rather broad ..... 9.  
 8a. Valve at tip about twice as broad as at middle, produced and  
 pointed at tip; clavus rather short and broad .....  
 ..... *Cucullia dædalis*, p. 91.  
 b. Valve only a little broader at tip, apex slightly produced and  
 roundly pointed; clavus rather long and narrow .....  
 ..... *Cucullia terreusis*, p. 87.  
 9a. Uncus straight at middle; harpe broad, just reaching beyond  
 costa; valve narrow, sharply produced at tip (genotype from  
 Europe) ..... *Cucullia artemisiæ*, p. 82.  
 b. Uncus well arched at middle; harpe narrow, reaching beyond  
 costa for half its length; valve rather broad, more roundly  
 produced at apex ..... *Copicullia rupifascia*, p. 113.  
 10a. Sacculus without a distinct clavus ..... 11.  
 b. Sacculus with a distinct clavus ..... 17.  
 11a. Vesica without stout cornuti but it may be more or less covered  
 with minute teeth ..... 12.  
 b. Vesica with distinct cornuti ..... 13.  
 12a. Valve very much contracted beyond middle; harpe very long;  
 vesica with large patches densely covered with minute teeth  
 ..... *Charidea elegantissima*, p. 121.  
 b. Valve gradually tapering towards tip, sole-shaped; harpe rather

- short; vesica with very few minute teeth ..... *Rhodochlæna botonga*, p. 114.
- 13a. Vesica with two cornuti ..... 14.
- b. Vesica with more than two cornuti ..... 15.
- 14a. Uncus very broad at middle; cornuti minute ..... *Leucochlæna leucogonia*, p. 116.
- b. Uncus narrow at middle; cornuti stout and long ..... *Ulochlæna fumea*, p. 118.
- 15a. Vesica without a patch densely covered with numerous short spine-like cornuti but with five stout cornuti, of which three are large; terminal lobe of ædæagus with saw-like teeth ..... *Ectocheila nigrilineata*, p. 123.
- b. Vesica with a terminal patch densely covered with numerous short spinelike cornuti; terminal portion of ædæagus without saw-like teeth; cornuti numerous or, if five in number, one is very large, the other four very small ..... 16.
- 16a. Valve very much contracted before middle; vesica with about 60 small irregularly shaped cornuti ..... *Caffristis ferrogrisea*, p. 126.
- b. Valve tapering towards rounded tip, vesica with one very stout, broadly based cornutus and four very small cornuti ..... *Eumichtis rubrimixta*, p. 127.
- 17a. Vesica with two pointed cornuti ..... 22.
- b. Vesica with more than two pointed cornuti ..... 18.
- 18a. Vesica with four pointed cornuti, of which one is rather small ..... *Empusada argentivitta*, p. 105.
- b. Vesica with three pointed cornuti ..... 19.
- 19a. One of the three cornuti bulbous at base, the others somewhat broadly based ..... *Cucullia brunnea*, p. 93.
- b. None of the three cornuti bulbous at base ..... 20.
- 20a. Uncus undulating towards tip, valve obliquely rounded at tip but without a corona of inwardly directed bristles ..... *Empusada hutchinsoni*, p. 104.
- b. Uncus downcurved at tip; valve with tip oblique and with a corona of inwardly directed bristles ..... 21.
- 21a. Vesica with a chitinous, suboval patch densely covered with teeth, in addition to the cornuti; valve with a narrow lobe from below costa projecting well beyond inner margin ..... *Empusada chrysota*, p. 106.
- b. Vesica without such a chitinous patch; valve with a broad lobe originating from inner margin ..... *Cucullia pallidicolor*, p. 98.
- 22a. One or more cornuti bulbous at base ..... 23.
- b. None of the cornuti bulbous at base ..... 24.
- 23a. Both cornuti bulbous at base, one of the cornuti about one-third

- the size of the other; in addition a broad chitinised patch covered with theeth ..... *Empusada pallidistria*, p. 107.
- b. Only one cornutus bulbous at base, the other much smaller, one only broadly based; vesica without a chitinised patch ..... *Cucullia consimilis*, p. 94.
- 24a. Vesica with a chitinised patch or with a long lobe from ædæagus covered or edged with teeth ..... 25.
- b. Vesica without such a chitinised patch or lobe ..... 26.
- 25a. Valve obliquely arched at tip; harpe from well before middle of valve; one cornutus about twice as long as the other, the longest broadly based ..... *Cucullia platti*, p. 93.
- b. Valve evenly rounded at tip; harpe from middle of valve; both cornuti of even length, one a little stouter than the other, both narrowly based ..... *Cucullia extricata*, p. 95.
- 26a. Valve narrowest at middle; harpe projecting a little beyond costa, somewhat curved towards base; clavus rather narrow; vesica with a suboval chitinised patch with teeth along the whole edge except at the narrow base; in addition the ædæagus has a long lobe edged on one side with teeth; cornuti long and moderately thick ..... *Cucullia albifuscata*, p. 99.
- b. Valve gradually tapering somewhat towards obliquely rounded apex; harpe not projecting beyond costa, straight and oblique; clavus broad and rounded; vesica without a suboval chitinised patch but with a lobe from ædæagus edged with teeth; cornuti rather short and thick at base ..... 27.
- 27a. Harpe rather narrow and somewhat long, just reaching the costa; largest cornutus almost straight and with two ridges well below it on the lobe of the vesica, these ridges are beset with very fine spines ..... *Cucullia atrimacula*, p. 96.
- b. Harpe rather broad and short, not reaching the costa; largest cornutus somewhat curved like a claw and with one chitinised ridge at base of its lobe which is beset with very fine teeth ..... *Cucullia perstriata*, p. 96.

### Genus CUCULLIA Schrank (Figs. 1—4; pl. IV.—VI.)

*Cucullia* Schrank, Fauna Boica, II. (2), p. 157 (1802); Hmps. n., Cat. Lep. Phal. VI. p. 14 (1906); Gaede, Seitz Gross-Schmett. XV. p. 55 (1934) <sup>1</sup>).

Type: *artemisix* Hufn. from Europe. (Plate VI. 2).

Proboscis well developed; palpi obliquely upturned, reaching a little beyond frons, second and first joint of almost even length,

<sup>1</sup>) For synonymy of all genera and species in this paper see Hampson's Catalogue Lepidoptera Phalænx vol. VI.

densely covered with scales, fringed with hair-like scales below on first joint, tufted with scales in front on second joint, third joint about one-third of second joint, covered with short appressed scales; eyes large, suboval; frons with a slightly rounded prominence and a small ridge above proboscis, densely and loosely covered with scales; antennae simple, first joint with a tuft of scales; vertex loosely covered with scales; tegulae covered with scales, tipped with long hair-like scales and upturned above the scales of the thorax, so as to form a hood with a ridge in the middle; thorax above densely covered with hair-like scales, below mixed with hairs; foretibia and tarsi without a claw; femora and tibiae of all legs loosely covered with hair-like scales, fringed with very long hair-like scales posteriorly; hindtibia with four spurs covered with appressed scales, outer spurs nearly half of inner spurs; tarsi with three rows of spines on inner side over the whole length; abdomen with dorsal crests on the first three segments, first crest very long, third crest composed of loosely fitting hair-like scales (in some species absent), middle crest of rather short densely fitting moderate scales (in some species obsolescent); two lateral coremata on second sternite, hidden in a pouch and covered with very long spreading hairs; the anal tuft of long hair is somewhat bifid. *Fore-wing*: rather elongate, costa well arched towards apex, termen oblique, slightly crenulate, inner margin almost straight, slightly bulging at basal half; cell a little over half of wing; R1 from before two-thirds of upper median; R2 and R3 on a stalk of nearly one-third of R2 and from middle of origin of R1 and upper angle; R4 and R5 on a stalk of one-third of R5; R3 anastomosing with half of stalk of R4-R5 and with one-third of free part of R4, thus forming a large elongate areole (in most S. African species the stalk of R4 and R5 only goes as far as the areole); M1 from areole; M2 from three-fourths of DC; upper DC very weak, strongly incurved; C1 a little further from M3 than M2 is; C2 from three-fourths lower median; A2 simple at base, somewhat undulating; on underside a dense tuft of long hair from uppermedian over the whole length, overhanging the cell, and a similar but smaller tuft from middle of cell. *Hind-wing*: triangular, with costa well curved before apex, termen arched, slightly crenulated, tornus rounded, inner margin well arched; cell a little over half of wing; Sc anastomosing with the upper median well beyond base for a short distance, thus forming an elongate, narrow, subbasal cell, the upper median being there very weak; RS and M1 from upper angle, M2 obsolescent (almost leaving no trace except near termen; M3 and C1 from lower angle; C2 from about two-thirds lower median; DC rather weak, incurved; A2 and A3 straight.

*Male genitalia*: uncus stout, strongly curved near base, then straight, narrowing before apex where there is a slight bulge

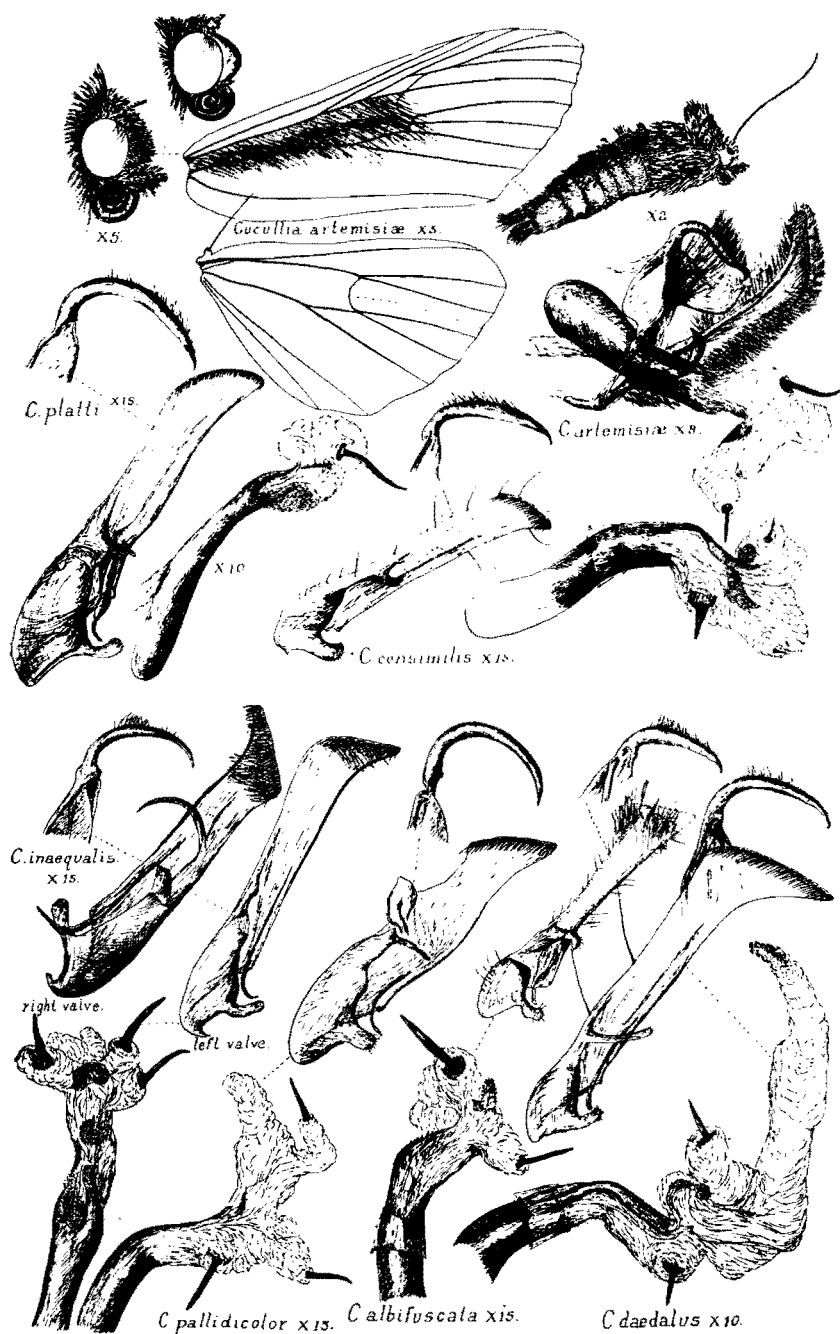


Fig. 1. Heads, (one with frons denuded), wing venation and ♂ genitalia of *Cucullia artemisiae* (genotype, from Europa); uncus, left valve and penis of *C. platti*, *C. consimilis*, *C. inaequalis* (also with right valve), *C. pallidicolor*; *C. albifuscata* and *C. daedalus*.

on upper side, then suddenly contracted to a fine curved point, on upper side densely covered with hair forming a triangular tuft; tergite rather broad, well chitinated and with a fringe of long hair posteriorly; sternite narrow, forming a short saccus at base and well chitinated; anus narrowly chitinated basally; valve narrow, of almost even width, costa upturned at terminal half, termen very oblique and short, provided with a corona of densely situated marginal spines; costa broadly chitinated, remainder of valve less so, except the sacculus from the base of which originates a broad, short, pointed harpe; outer side of valve densely covered with scale-like hairs on inner margin, which are short near termen, with long hairs at costa for terminal half; sacculus with a very short rounded clavus; ædæagus stout, thickest at base, moderately chitinated; vesica with two stout cornuti, each at the end of a lobe, one cornutus being stouter and somewhat curved; two other lobes without cornuti; near base of vesica a somewhat chitinated patch partly covered with minute granules.

This genus has many Palæarctic representatives, very few from India, a small number from North America, a few reaching as far as Mexico, a small number from the Ethiopian region (mostly from South Africa) and none from the Indo-Australian and South American regions. About 100 species have been described.

The South African species may be distinguished as follows:

- 1a. Forewing with orbicular and reniform quite distinct ..... 2.
- b. Forewing with orbicular and reniform indistinct, at most represented by a few black points ..... 8.
- 2a. Forewing with the area between antemedial and postmedial lines darker than before antemedial and beyond postmedial lines ..... 3.
- b. Forewing with the whole area of even colour, except sometimes at costa ..... 5.
- 3a. Ground-colour of forewing avellaneous; vertex, tips of tegulæ and the thorax as dark as the middle area of the forewing (clove brown) ..... *platti*, p. 93.
- b. Ground-colour of forewing pale mouse grey or even paler; vertex, tegulæ and thorax of the same ground-colour as the forewing ..... 4.
- 4a. Forewing with the antemedial line very distinct and well defined from costa to lower median; reniform evenly rounded on inner side; an oblique black fascia from beyond the postmedial to termen between inner marginal fold and M3; terminal black marks linear, narrow, broad and confluent between C1 and A2 .....: *nigrilinea*, p. 88.
- b. Forewing with the antemedial line obsolescent between costa and lower median; reniform inwardly produced on lower median; no oblique black fascia between M3 and inner marginal fold;



- terminal black marks lunular, nowhere confluent ..... *terrensis*, p. 87.
- 5a. Forewing with a black narrow fascia at inner margin from beyond base to postmedial line or beyond ..... 6.  
 b. Forewing without a black fascia at inner margin ..... 7.
- 6a. Ground-colour of thorax and forewing pallid mouse grey; of hindwing pale pinkish buff, translucent ..... *consimilis*, p. 94.  
 b. Ground-colour of forewing vinaceous-buff; of hindwing pinkish buff, not translucent ..... *brunnea*, p. 93.
- 7a. Ground-colour of thorax and forewing pale vinaceous-fawn, partly tinged with smoke grey, orbicular and reniform inconspicuous, slightly defined by a narrow dark line *dædalis*, p. 91.  
 b. Ground-colour of thorax and forewing hair brown, tinged and irrorated with fuscous; orbicular and reniform conspicuous, paler than ground-colour and well defined by a narrow black ring ..... *inæqualis*, p. 89.
- 8a. Forewing with a narrow black fascia in cell from base, extended between M2 and M3 as far as where the subterminal line should be ..... *perstriata*, p. 96.  
 b. Forewing without a black fascia in cell ..... 9.
- 9a. Forewing with a curved fuscous fascia below end of cell, being the remains of the lower edge of the reniform, and continued into the oblique diffused fascia from apex ..... *minuta*, p. 87.  
 b. Forewing without such a fascia ..... 10.
- 10a. Forewing with a narrow black line at inner marginal fold from base to antemedial, which is obsolescent, and another black line from there above it till before base of C1; an oblique broad fascia from inner marginal fold well before tornus and reaching the termen ..... *extricata*, p. 95.  
 b. Forewing without such black lines and without a black fascia reaching the termen ..... 11.
- 11a. Thorax light buff; ground-colour of forewing warm buff and not irrorated; forewing without well defined transverse lines or fasciæ, only the postmedial is somewhat indicated; hindwing white, translucent, with a slight narrow clouding along termen and a hair brown terminal edging ..... *pallidicolor*, p. 98.  
 b. Thorax and forewing light buff but well irrorated and clouded with fuscous, or thorax and forewing light drab irrorated and clouded with fuscous; transverse lines for the greater part distinct; hindwing broadly bordered along termen with hair brown ..... 12.
- 12a. Head, thorax and ground-colour of forewing light buff, irregularly irrorated with fuscous, so as to give the forewing a mottled appearance; expanse 35 mm. .... *albifuscata*, p. 99.  
 b. Head, thorax and ground-colour of forewing light drab, fairly

evenly suffused and irrorated with fuscous; expanse 47 mm.  
 ..... *atrimacula*, p. 96.

***Cucullia terreusis* Feld. (Fig. 2; pl. IV. 4.)**

*Cucullia terreusis* Feld., Reise Nov. pl. 108, f. 53 (1874); Hmps., Cat. Lep. Phal. VI. p. 46, pl. XCVIII. fig. 21 (1906); Gaede, Seitz Gross-Schmett. XV. 56, pl. 7 (1934).

*Male genitalia*: two lateral coremata at base of abdomen, hidden in pouches and covered with very long hair; uncus stout, strongly curved at base, then well arched, gradually tapering to a fine curved point, covered with hair on upper side; tergite of almost even width, rather weakly chitinated, except anteriorly, tufted with hair posteriorly; sternite narrow, moderately chitinated, ending in a short curved saccus; anus not chitinated below; valve rather narrow, strongly upcurved terminally at costa, corona well developed, costa narrowly chitinated, remainder of valve weakly so; sacculus rather narrow and with a long clavus, which is slightly contracted at middle and terminally covered with short hair; harpe from one-third of inner margin, moderately chitinated, narrow, roundly pointed, projecting for nearly half its length beyond the costa; ædæagus weakly chitinated, stout; vesica with two short lobes near base, each with a stout broadly-based cornutus one of which is slightly smaller; another lobe near base with a curved, broad, chitinated band, covered with minute teeth; a very long lobe without armature, finely punctulated along terminal fourth.

*Exp.* 44—48 mm. *Hab.* Type from Damaraland (South West Africa); also recorded from Cape Town and Durban. In my collection from Uitenhage, Ngqeleni (Pondoland), Durban, Rietvlei (Natal), Umvuma; February and November.

***Cucullia minuta* Möschl. (Fig. 2; pl. IV. 6.)**

*Cucullia minuta* Möschl., Verh. z.—b. Ges. Wien. XXXIII. p. 295; pl. XVI. f. 9 (1883); Hmps., Cat. Lep. Phal. VI. p. 55, pl. XCVII. fig. 15 (1906); Gaede, Seitz Gross-Schmett. XV. p. 57, pl. 7 (1934).

*Male genitalia*: two lateral coremata at base of abdomen, hidden in pouches and densely covered with long hair; uncus stout, strongly curved at base, well arched beyond, tapering to a fine point, rather sparsely covered on upper side with hair; tergite moderately chitinated, heavily so anteriorly, fringed with long hair posteriorly; sternite narrow, longer than tergite, ending in a short saccus; anus slightly chitinated below; valve as in *artemisix* but somewhat broader; a well developed corona; three stout bristles at almost even space on inner margin in addition to the fringes of hair on outer side of valve; fringe along costa and outer side of valve longer but more

sparsely distributed, sacculus rather broad and with a moderate clavus which is constricted at middle, rounded at tip and there covered with a few bristles; from just beyond saccus an almost straight harpe, projecting a little beyond costa and ending in a blunt point; ædœagus rather weakly chitinised except the two terminal lobes; vesica with three basal lobes, each covered with a cornutus; middle ones shortest and less stout, the shorter lateral one bulbous at base, the longer lateral one broadly based; between this and the smallest cornutus a chitinised curved band, densely covered with minute teeth; beyond middle cornutus a long tubular lobe, finely punctulated at terminal third.

*Exp.* 40—43 mm. *Hab.* Type from Grahamstown; also recorded from Annshaw (Cape Colony). In my collection from Bloemfontein, Thaba'nchu, Pretoria; February, April and October.

*Cucullia nigrilinea* spec. nov. (Fig. 4; pl. V. 6, pl. VI. 9.)

♂. Head, thorax and forewing drab grey; abdomen and hindwing light buff; palpi irrorated with black, densely so on third joint, which is rather long; first and second joint fringed in front with light buff scales and hair-like scales; frons and vertex roughly scaled with light buff, drab grey and black scales mixed; cilia over the eyes black, tipped with whitish; tegulæ with a black fascia along posterior edge; patagia with some blackish scales on posterior edge; metathorax with a spreading crest of black scales. *Forewing*: basal half of wing, especially along medial portion, and area along costa before apex well irrorated with fuscous; nearly all the veins narrowly edged with black and a narrow black line on inner marginal fold; a small black macula at costa and one below lower median, indicating the subbasal line; antemedial black, broad but diffused, from costa to inner margin, angled outwardly in cell, below inner marginal fold and below A2, angled inwardly on lower median and A2; two inwardly oblique broad black maculæ above and below inner marginal fold before antemedial and indications of a similar macula at costa; orbicular large, rounded, narrowly edged with black and broadly centred with fuscous, touching the antemedial; reniform sub-oval, large, obliterated on outer side, accentuated on inner side by a black edging, touching a small diffused black macula at costa; postmedial obsolescent, from costa to C2, then narrow, black, angled inwardly at inner marginal fold, outwardly on A2, inwardly oblique to inner margin; two narrow black fasciæ above and below inner marginal fold from antemedial to postmedial, converging towards postmedial and meeting there; three small light buff points at costa well before apex and a similar macula near apex; subterminal line absent but a black elongated suffusion below R5, before where the subterminal line would have been and a similar suffusion beyond it between veins M2 and C2 and above and below inner marginal fold;

a series of black terminal lunules between the veins, which become confluent and broader between C1 and A2; cilia irrorated with hair brown, the basal half narrowly chequered with whitish opposite the veins. *Hindwing*: veins densely irrorated with fuscous; a broad terminal border lightly irrorated with fuscous and diffused on inner side; cilia of ground-colour.

*Male genitalia*: abdomen with lateral coremata each covered with a hair-pencil fitting into a pocket; uncus stout, strongly curved at basal half, then almost straight and tapering to a fine point, covered on upper side with moderate hairs; tergite broad, well chitinated, especially along the anterior edge; sternite narrow, well chitinated, terminating in a short saccus; anus without chitination; valve of almost even width, except at middle where it is contracted owing to the incurved inner margin; apex slightly produced; termen very oblique, almost straight and with a corona consisting of rather long bristles; apical area densely tufted with long hairs; some long hairs along the margins; inner side sparsely covered with short hairs; sacculus rather short and provided with a broad rounded clavus; costal area of valve well chitinated, remainder weakly so; harpe from before middle of valve, in right valve projecting a little beyond costa, broad and terminally with some short hairs, in left valve only half that size; ædæagus well chitinated, of almost even width, somewhat curved; vesica with three stout moderately based cornuti of which two are almost of even length, the third about two-thirds of the longest; a broad chitinated curved band with very few short teeth; basal portion of vesica finely punctulated.

*Exp.* 38 mm. *Hab.* Bloemfontein (Irving) 20 September 1924.

This species closely resembles *consimilis* in general colouration, while the hindwings are more like those of *brunnea*, but the pronounced black lines on the veins readily differentiate it from the former and the postmedial marking between C2 and A2 distinguish it from the latter; moreover, in *consimilis* the cornuti are much smaller and none of them have the basal bulb of the one cornutus of *brunnea*; unfortunately only one specimen has come to my notice.

*Cucullia inaequalis* spec. nov. (Fig. 1; pl. V. 10; pl. VI. 8.)

♂, ♀. Head, thorax and forewing light mouse grey, heavily irrorated with fuscous; palpi with the scales fuscous, tipped with whitish, first and second joint fringed with pinkish buff hair; scales on frons with a transverse fuscous fascia across middle, which is incurved in the centre and outwardly oblique at the ends which are directed towards base of antennæ; vertex tufted with fuscous scales between base of antennæ; basal joint of antenna tufted with hair-like spreading scales tipped with white, partly fuscous, partly sayal brown; tegulæ with a black fascia across base and another fascia of

saya brown before posterior edge and a terminal edging of sayal brown; patagia sprinkled with sayal brown; abdomen white at base then pinkish buff, first three segments with small black crests; metathorax with a crest of ground-colour mixed with black; hindwing pale pinkish-buff, almost white at base and translucent. *Forewing*: subbasal indicated by two oblique black maculae at costa with a ground-colour in between and another black macula below lower median; antemedial double, black, diffused and broad between costa and inner marginal fold, then narrow and strongly inwardly oblique to A2, then interrupted and continued below A2 but parallel to the portion between inner marginal fold and A2; all veins narrowly edged with black; orbicular large, rounded, edged with black and filled in with a ground-colour irroration; medial line indicated by a broad, oblique, diffused, black macula from costa to reniform; reniform large, oval, somewhat constricted at middle, edged with black, filled in with ground-colour and some pinkish buff scales; postmedial very faint between costa and C2, excurved and slightly angled inwardly between the veins, below C2 distinct as a black triangular mark on inner marginal fold and with some pale scaling before and beyond it, then continued across A2 to inner margin as a narrow ill-defined black macula; three small whitish points at costa beyond postmedial; subterminal indicated by some ill-defined small black maculae between the veins; a terminal series of black lunules between the veins, which are confluent above and below C2; cilia of ground-colour, with basal half somewhat darker and sprinkled with whitish scales. *Hindwing*: veins densely irrorated with fuscous, terminal border broad, pale fuscous, diffused on innerside; cilia whitish, of ground-colour at base and with some pale fuscous scales at basal half from apex to C2. In the specimens from the Transvaal, especially the females, the general colour of head, thorax and forewing is somewhat tinged with olive-brown and the markings on the forewing tend to become obliterated; another specimen from Bloemfontein has the ground-colour of the forewing pale grey and the irroration is more patchy, giving it a somewhat mottled appearance, but the genitalia of both these forms are identical; some specimens show a very narrow black line between lower median and inner marginal fold, joining the postmedial.

*Male genitalia*: abdomen with lateral coremata covered with long hair, hidden in pouches; uncus moderately stout, tapering to a fine point, strongly curved at basal third, remainder well arched, upper side with moderate hairs; tergite rather broad, narrow at basal half, well chitinised, especially along anterior edge, fringed with long hair-like scales posteriorly; sternite rather short, narrow, tapering to a short saccus; anus slightly chitinised below; valve of almost even width with costa and inner margin somewhat undulating, apex slightly produced, termen oblique, straight or slightly arched and

with a coronna consisting of rather long bristles; inner side of terminal half of valve sparsely covered with hair, terminal area well tufted, outer side covered with long hair-like scales, becoming short and curved along termen and terminal area of innermargin; sacculus rather narrow and with a broad moderately long clavus, which is terminally rounded and constricted basally; harpe of right valve very long, from middle of valve near inner margin, tapering to a fine point and well curved (the harpe of this species is longer and more chitinated than any of the other species known to me though the length varies a little and so does the curving); left valve without a harpe, but at its place a minute bulge a little above inner margin (this is the only species in South Africa known to me which has the harpe of the left valve so much reduced but several specimens have been examined for this character and they were found to be constant); ædæagus well chitinated, broadest at base, terminating in a punctulated process, which gradually merges into the vesica; vesica three lobed, each lobe with a cornutus; all cornuti stout and broadly based, but of different length, the shortest with a small basal bulb; between the three cornuti a broad chitinated patch, which is somewhat curled up but evidently without teeth.

This species may easily be confused with *brunnea* which, however, has the outer half of the reniform obsolescent, the lines are more diffused and the postmedial mark between C2 and A2 has in that species a transverse dark line across the pale scaling before the triangular black macula; the hindwing is darker basally; the genitalia are totally different as regards shape of uncus, shape of harpe and the cornuti.

*Exp.* 34—45 mm. *Hab.* Male type, Bloemfontein (Irving), 2. III. 21; female type, Bloemfontein (Irving) 9. XII. 22. Five male cotypes, three from Bloemfontein (Irving) IX., X., XII.; five female cotypes from Bloemfontein (Irving), in III., IX., XI., and one from Thaba'nchu (Edelsten), October 1924. Of the specimens in which the forewing is tinged with olive-brown two male cotypes are from Pretoria (Janse), in II. and X., three female cotypes from Pretoria (Janse), I., Johannesburg (Cooke), III, and Johannesburg (Linford), I.

*Cucullia dædalis* spec. nov. (Fig. 1; pl. V. 11; pl. VI. 10.)

Head, thorax and forewing pale smoke grey, more or less irrorated with fuscous-black; palpi of the same colour, without any transverse lines; some faint hair brown transverse lines across the tegulae and a fuscous-black transverse line near base; patagia without any lines; first basal abdominal crest large, black, second one small of groundcolour, tipped with fuscous; abdomen and hindwing tillleul buff, the former somewhat irrorated with drab-grey. *Forewing:*

a narrow black line from base to antemedial on inner marginal fold; subbasal indistinct, fuscous; antemedial fuscous, indistinct from costa to base of C2 and with another hair brown line parallel to it and well beyond it, then from base of C2 broader and more distinct, inwardly oblique to A2, then outwardly dentate below A2, then to one-third of inner margin; orbicular indistinct, pale, rounded and narrowly edged with black in type; reniform pale in type, narrowly edged by black, extended from R1 to well below lower angle, lower half broadest, basal half of C2 more or less edged with black; terminal third of A2 and some of the other veins edged with black but less so in ♀ type; postmedial indistinct in type, in cotype broad but diffused, hair brown, excurved beyond cell, somewhat angled inwardly on inner marginal fold, outwardly on A2; subterminal indicated by irregular blotches of ground-colour without any irroration; a terminal series of narrow black lunules between the veins; cilia hair brown, basal half somewhat darker and chequered with ground-colour of wing opposite the veins. *Hindwing*: veins somewhat streaked with hair brown; a broad hair brown terminal border, somewhat darker along termen; cilia tilleul buff, sprinkled with hair brown along base.

The male type is in a somewhat discoloured condition owing to a previous slight attack of mould; the female type is more clearly marked and has a fresher appearance and though smaller is no doubt conspecific to the male.

*Male genitalia*: base of abdomen with lateral hair pencils, hidden in pockets; uncus stout, curved at base, then almost straight and tapering to a curved point, well tufted with hair on upper side; tergite moderately broad, well chitinised anteriorly, tufted with long hair posteriorly; sternite narrow, well chitinised, ending in a short rounded saccus; anus slightly chitinised below; valve long, rather narrow, of almost even width, strongly produced at apex, where the otherwise straight costa is strongly curved; termen oblique, almost straight and with a corona of closely fitting bristles; costal area well chitinised; remainder of valve, except basal third, weakly chitinised; inner side of valve covered with hairs, outer side with hair-like scales along inner margin, along costa for terminal half with long bifid scales; saccus rather narrow and provided with an elongated clavus, covered on inner side with short bristles; harpe from about one-fourth of valve, a little above inner margin, long and projecting well beyond costa, parallel, slightly curved towards tip, which is rounded and covered with some short bristles; in addition to the scale-like hairs along inner margin there are two long bristles, one from beyond harpe and one from middle of inner margin; ædæagus stout, strongly curved at middle, well chitinised and terminating in two narrow lobes which are densely granulated and gradually merge

into vesica; manica finely granulated above; vesica with two short basal lobes, each provided with a moderate, stout, broadly based cornutus; between the lobes a narrow, curved, well chitinated band, covered with minute teeth; beyond this a long tubular lobe, diminishing in width towards tip and there finely granulated.

This species comes closest to *terrensis*, but that species has a more clearly marked forewing and the apex of the valve is far less produced.

*Exp.* Male type 48 mm.; female type 39 mm. *Hab.* male type Enquabeni (Natal), December 1909; female type Krantzklouf 23rd. March 1917 (L. Hargreaves).

***Cucullia brunnea* Hmps. (Fig. 2; pl. IV. 1.)**

*Cucullia brunnea* Hmps., Ann. S. A. Mus. II. p. 277 (1902); Cat Lep. Phal. VI. p. 30, pl. XCVI. fig. 27 (1906); Gaede, Seitz Gross-Schmett. XV. p. 35, pl. 7 (1934).

*Male genitalia:* abdomen without coremata at base; uncus stout, curved at base, then almost straight, tapering to a slightly curved point, a tuft of hair on upper side beyond base; tergite rather broad, moderately chitinated, except the anterior ridge, fringed with moderate hair posteriorly; sternite very narrow, about as long as tergite, ending in a pointed saccus placed at right angle; anus slightly chitinated below; valve of almost even width, slightly contracted towards middle, broadening towards apex which is obliquely rounded and provided with a well developed corona; outer side and edges of valve covered and fringed with hair, mixed with short scales towards apex; costa broadly chitinated, remainder less so; sacculus rather short and with a long, broadly rounded clavus, covered with very short hair; harpe very short, hardly reaching beyond costa, weakly chitinated; ædæagus stout, weakly chitinated; vesica with three lobes near base, each terminating in a cornutus; cornuti of almost even length but one bulbous at base and somewhat curved, the others broadly based and straighter; at conjunction of lobes a rather wavy chitinous band, densely covered with minute spines, beyond this a long tubular lobe finely punctulated at tip.

*Exp.* 33—35 mm. *Hab.* Type from Buntingville (Cape Colony); also recorded from Transkei and Uganda; in my collection from Stellenbosch, Bloemfontein, Rosmead, Thaba'nchu. March, May, September, October and November.

***Cucullia platti* Prout. (Fig. 1; pl. V. 7; pl. VI. 4.)**

*Cucullia platti* Prout, The Entomologist, LVIII. p. 213 (1925); Gaede, Seitz Gross Schmett. XV. p. 57 (1934).

*Male genitalia:* abdomen without lateral coremata at base; uncus stout, evenly curved, strongly so at base, tapering to a fine



point, sparsely covered on upper side with moderate hairs; tergite rather short, moderately chitinised, fringed with hair-like scales posteriorly; sternite rather narrow, almost twice length of tergite, gradually tapering to a short saccus; anus slightly chitinised below; valve of almost even width, obliquely rounded at tip; corona consisting of very short bristles, almost hidden in rather dense covering of hair on inner side of valve; outer side of valve covered with hairs and hair-like scales; sacculus rather broad and provided with a curved, broadly rounded clavus, terminally provided with some short bristly hairs; beyond sacculus from middle of valve a well chitinised harpe, hardly reaching beyond costa, broad at base, suddenly contracting beyond middle; ædæagus well chitinised, rather slender, terminating in two long lobes that are finely granulated; vesica with two cornuti but without a chitinised band; one cornutus almost twice as long as the other, stouter and somewhat undulating, both broadly based and tapering to a point.

*Exp.* 39—41 mm. *Hab.* Type from Durban. In my collection from Durban, Kranskloof, Estcourt and Salisbury X—XII; bred by E. E. Platt from larvæ feeding on *Colendula*.

***Cucullia consimilis* Feld. (Fig. 1; pl. V. 9.)**

*Cucullia consimilis* Feld., Reise Nov. pl. 108, f. 52 (1874); Hmpsn., Cat. Lep. Phal. VI. p. 30 (1906); Gaede Seitz Gross-Schmett. XV. p. 55, pl. 7 (1934).

*Cucullia pusilla* Möschl., Verh. Z.-b. Ges. Wien, XXXIII. p. 296, pl. XVI. f. 10 (1883).

*Male genitalia:* Base of abdomen without lateral coremata; uncus stout, slightly thicker before middle, then tapering to a fine curved point, basal fourth strongly curved, then straight; tergite rather broad, well chitinised, tufted with long hair posteriorly; sternite rather narrow, well chitinised, terminating in a pointed saccus, set almost at right angles; valve of almost even width, narrow, slightly wider at base, upcurved towards apex, termen very oblique, slightly arched and with a corona of moderate bristles, basal half and a ridge along costa moderately chitinised, remainder less so; sacculus with a rather long, broad, rounded clavus, provided with a few short bristles terminally; terminal portion of sacculus near costa very heavily chitinised, so as to form a triangular patch which takes no stain; a moderately chitinised ridge along inner margin till beyond middle, from which originates a short, roundly pointed harpe; inner side of valve sparsely covered with long hair, outer side with very long hair, mixed with bristles along the inner marginal edge, outer side of termen with curled hairs mixed with scales; ædæagus rather stout, thickest at base, well chitinised and terminating in a rather long narrow process, which gradually merges into the vesica and is

densely covered with minute teeth, terminally it merges into a large chitinised patch on the vesica, also covered with minute teeth; vesica with four lobes; each of the three basal lobes terminates in a cornutus; longest cornutus with a chitinised bulb at base; medium sized cornutus much shorter and with a somewhat broad base; third cornutus minute, stout.

Gaede remarks (l.c.) "that he figures *pusilla* Möschl. and that Felder's figure of *consimilis* looks quite different"; this is quite true and though Gaede's figure is somewhat different from the one given by Möschler yet they resemble what I have as *consimilis* more than Felder's figure does, except for the more pronounced terminal border of the hindwing, which is vague and ill-defined in Möschler's and Gaede's figures. Felder's figure looks very much like *extricata* and it is quite well possible, that what I give as *consimilis* should be named *pusilla* and that Felder's *consimilis* must be looked upon as a synonym of *extricata* Walker. However, these hand-painted figures cannot be trusted, especially in this group where the species closely resemble each other in markings. Only a thorough study of the genitalia of the types can settle this problem. As Hampson had probably seen Walker's and Felder's types I provisionally follow his nomenclature.

*Exp.* 30—35 mm. *Hab.* Type from Knysna; also recorded from Bloemfontein; Annshaw (Cape Colony), Grahamstown, Rosmead, Concordia. In my collection from Bloemfontein and Thaba'nchu; III., IX.—XI.

### *Cucullia extricata* Wlk. (Fig. 2; pl. IV. 3.)

*Cucullia extricata* Wlk., Cat. XI. p. 630 (1857); Hmps., Cat. Lep. Phal. VI. p. 46, pl. XCVII. fig. 6 (1906); Gaede, Seitz Gross-Schmett. XV. p. 56, pl. 7 (1934).

*Male genitalia:* abdomen without basal coremata; uncus stout, slightly wider at middle, tapering to a point, well arched, strongly so at basal half, some hairs on upper side; tergite rather broad, moderately chitinised, fringed with hair posteriorly; sternite rather narrow, moderately chitinised, ending in a rounded saccus; valve of almost even width, slightly wider at base, almost straight, terminally rounded, rather weakly chitinised, a little stronger so along basal third and along costa; sacculus with a rather long clavus, which is terminally rounded and covered with some short hairs; corona along rounded termen with the bristles curved and directed inwardly, so as to be difficult of observation; inside of valve moderately covered with long hair, outside densely so, mixed at terminal area with curved hair-like scales; harpe stout at base, contracted beyond middle, projecting well beyond costa, terminal half forming three

ridges; ædœagus rather weakly chitinised terminally, upper side densely beset with minute teeth; vesica tubular, with two lobes near base, each lobe provided with stout, broadly based, curved cornuti; the one nearest the base being thinnest.

*Exp.* 43—48 mm. *Hab.* Caffraria (Cape Colony); also recorded from Knysna, Annshaw, Transkei and Natal. In my collection from Pondoland and Durban; I.

### *Cucullia perstriata* Hmps. (Fig. 2; pl. IV. 2.)

*Cucullia perstriata* Hmps., Cat. Lep. Phal. VI., p. 43; pl. XCVII. fig. 5 (1906); Gaede, Seitz Gross-Schmett. XV. p. 56, pl. 7 (1934).

*Male genitalia:* abdomen without basal coremata; uncus stout, curved at base, then straight, tapering to a curved point, covered with hair on upper side; tergite rather narrow, weakly chitinised, except along anterior edge; sternite narrow, more chitinised, ending in a rounded upturned saccus; valve narrow, of almost even width at basal half, then gradually tapering, costa slightly upcurved, termen obliquely rounded and with a corema consisting of rather long bristles; a number of bristly hairs at intervals along lower terminal edge; basal half of valve and along costa moderately chitinised, remainder less so; sacculus rather narrow and provided with a short rounded clavus; harpe rather broad, straight, almost reaching costa, terminally rounded and with a series of short hairs along posterior edge; terminal third of valve covered with long hair on inner side, whole of outer side covered with long hair mixed with scales and hair-like scales; ædœagus short and stout, weakly chitinised, gradually merging into the vesica, which has two short basal lobes, each with a cornutus; a longer central lobe without cornutus, but for the greater part finely punctulated; at base of vesica a chitinised ridge provided with triangular teeth, probably a continuation of the ædœagus; the one small lobe with a curved chitinous patch at base, densely covered with minute teeth, (the cornutus of this lobe has a broader base, is stouter and somewhat more curved than the other cornutus).

*Exp.* 42 mm. *Hab.* Type from Buntingville (Cape Colony); also recorded from Transkei and Uganda. In my collection from Estcourt (Natal).

### *Cucullia atrimacula* Hmps. (Fig. 2; pl. IV. 5.)

*Cucullia atrimacula* Hmps., A.M.N.H. 8, IV. p. 385 (1909); Gaede, Seitz. Gross-Schmett. XV. p. 57, (1934).

*Male genitalia:* very similar to those of *perstriata* but the valve is a little shorter and more oblique terminally; the harpe is a little longer and narrower; the clavus is more constricted at base;

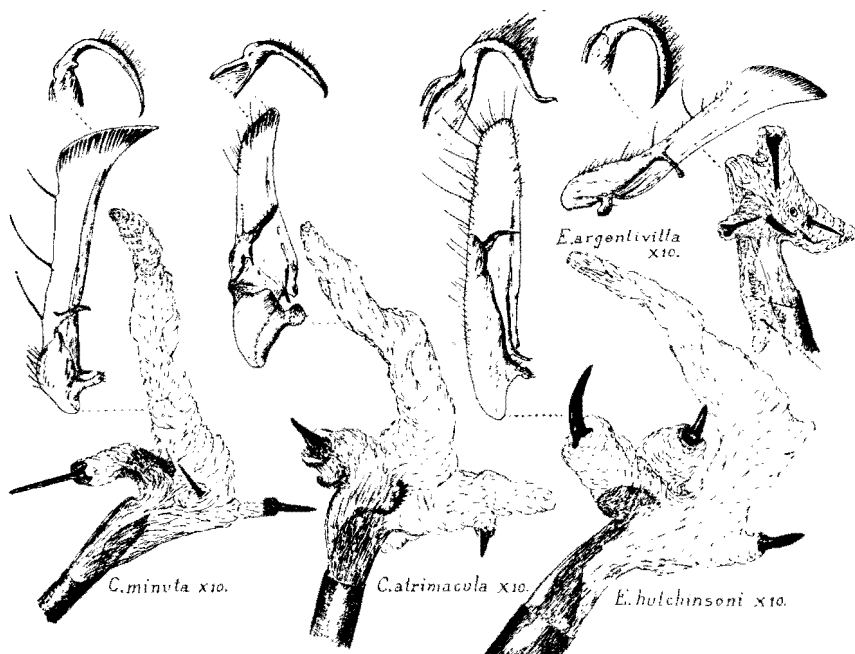
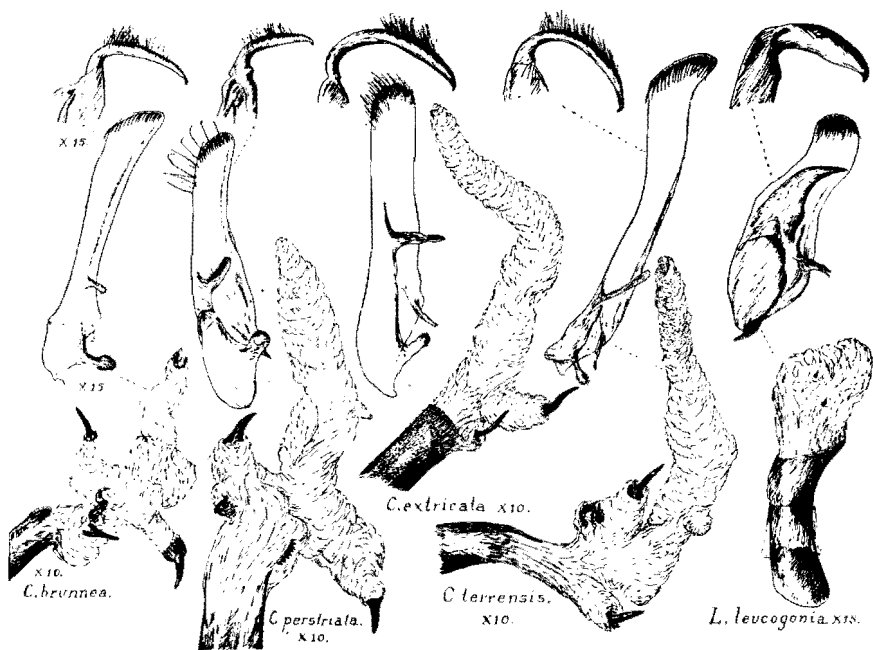


Fig. 2. Uncus, left valve and penis of *Cucullia brunnea*, *C. perstriata*, *C. extricata*, *C. terrensis*, *Leucochlæna leucogonia*, *Cucullia minuta*, *C. atrimacula*, *Empusada hutchinsoni* and *E. argentivitta*.

the uncus is the same, except for the base being a little broader; ædæagus stout, rather short and weakly chitinised, gradually merging into the vesica, which is granulated on upper side at base; vesica as in *perstriata*, but apparently with an additional lobe; the two cornuti as in *perstriata* but stouter at base and not curved; the toothed ridge as in *perstriata* and more clearly connected with ædæagus; chitinous patch at base of the one lobe narrower, but more heavily chitinised and also covered with very fine teeth; terminal half of long lobe densely covered with slightly chitinised minute teeth.

*Exp.* 44—46 mm. *Hab.* Type from the Transvaal. In my collection from Durban and White River; II.

***Cucullia pallidicolor* spec. nov.** (Fig. 1; pl. V. 8; pl. VI. 6.)

Head, thorax, abdomen and ground-colour of forewing pinkish buff; hindwing pure white, translucent; palpi and frons irrorated with fuscous; underside pale pinkish buff. *Forewing*: subbasal only represented by a few fuscous scales; lower median and base of C1 and C2 streaked with fuscous-brown; antemedial consisting of two fuscous-brown lines, parallel to each other, beginning from lower median, strongly zigzagged outwardly on submedian fold, inwardly on A2, outwardly below A2, but not reaching as far as above A2; a few fuscous scales below costa, representing the antemedial above upper median; orbicular represented by two small fuscous spots below upper median and a few fuscous scales above lower median, space between these spots somewhat paler than ground-colour; reniform represented by two small fuscous spots above and below upper median and a few black scales between the base of veins R5 to C1; above this a series of small fuscous maculæ oblique from costa to one-fourth of R5, representing the origin of the postmedial, then obliterated till below C2, then continued as two narrow double fuscous fasciæ, angled inwardly at submedian fold, outwardly above A2, then oblique to beyond middle of inner margin; space between those lines and beyond outer line paler than ground-colour; beyond this on innermarginal fold a lunulated fuscous macula; a broad irroration of black scales along a little over terminal half of innermargin; three small white spots beyond postmedial at costa; a series of small terminal black maculæ between the veins, which become lunules below C1; cilia of ground-colour with a somewhat darker base. *Hindwing*: terminal half of veins narrowly irrorated with hair brown and with a slight terminal irroration of hair brown from apex to C2, at tornus ill-defined; rather broad hair brown lunules between the veins; cilia white with a faint hair brown line across before middle; abdominal crests fuscous; abdomen above somewhat irrorated with hair brown.

*Male genitalia*; base of abdomen without hair pencils; uncus moderately stout, of almost even width, suddenly pointed at tip, strongly curved at base, well curved beyond; tergite rather short, moderately chitinated, stronger so along anterior edge, posterior edge fringed with long hair; sternite rather long, moderately chitinated, terminating in a moderate saccus; anus hardly chitinated below; valve of almost even width, somewhat undulating; termen very oblique, slightly arched and with a corona of closely situated bristles; terminal half of valve weakly chitinated, rather sparsely covered on inner side with moderately long hairs, more densely with longer hairs on outer side; basal half better chitinated, especially the sacculus, which is rather narrow and has a rather broad clavus, which is rough on outer side and covered with a few short hairs; from end of sacculus, just above inner margin, a weakly chitinated, rather narrow harpe, not quite reaching costa; immediately beyond harpe a moderately chitinated broad lobe, projecting well beyond inner margin and covered on outer side with short hair (this lobe I have not found in any other species of this genus, except a possible representative of this in the right valve of *inaequalis*, but situated there before the harpe); ædæagus rather stout, weakly chitinated, terminating in two slightly more chitinated lobes; vesica with four lobes, three of which are each provided with a rather long, stout, narrowly based cornutus.

This species resembles in general colouration and markings *extricata* mostly, but that species has black strigæ below lower median and along inner marginal fold and the dark macula near tornus is continued to termen, also the shape of the valve is quite different and the vesica has there only two cornuti.

*Exp.* 38—42 mm. Male type from New Hanover (Hardenberg), November 1914; female type from Sarnia (Williamson), February 1912; one male and one female cotype from Durban and Barberton in February and January respectively.

***Cucullia albifuscata* spec. nov. (Fig. 1; pl. V. 5; pl. VI. 7.)**

Head, thorax and forewing tillleul buff; palpi at sides, frons and vertex densely irrorated with fuscous-black; tegulæ with a narrow black line across base, a hair brown fascia across middle and tips fuscous; the tegulæ form a well pronounced hood; patagia on inner side well irrorated and fringed with black; metathorax somewhat tufted with black and whitish scales mixed; hindwing hyaline white. *Forewing*: subbasal indicated by a narrow black line from costa to upper median, angled outwardly at middle and by a small black dash below lower median; inner marginal fold with a narrow black line from beyond base to antemedial; antemedial beginning as an oblique black fascia from costa to upper median, then

interrupted in cell and continued as a pronounced black streak along lower median from base of C2 to about middle of lower median, then a double black outwardly oblique line above upper median, then an inwardly oblique black line to A2, with a broad fuscous fascia before it and parallel to it, then a narrow black line below A2 directed outwardly, then angled inwardly as a broad fascia to inner margin; some whitish scaling before this and some fuscous clouding towards base; orbicular and reniform obliterated; medial line indicated by an oblique black fascia from costa to upper median, then obliterated; a similar fascia, but shorter and followed by some white scales, indicates the postmedial, which is then obliterated except for a black point between R5 and M1 and a black curved striga from M2 to C2, then interrupted, except for some black scaling along the veins and continued as a strongly incurved black fascia between veins C2 and A2, then as a narrow fascia inwardly oblique to inner margin; area before and beyond the postmedial indications blotchily tinted in small area with hair brown; most veins beyond it narrowly streaked with black; costa beyond it broadly edged till before apex with black and with three white points in it; subterminal indicated by some hair brown clouding before and beyond it, and by a diffused triangular black macula on C2; a terminal series of small black maculae, which become almost confluent below C2; diffused white strigæ beyond the postmedial between veins R5 to M2, M3 and C1; a black striga, edged on upper side with white, between M2 and M3 and terminally tipped with white; cilia of ground-colour, irrorated with hair brown, but with basal white V-shaped marks opposite the veins which are continued into the wing between the terminal maculae. *Hind wing*: a moderately broad terminal hair brown border, diffused on inner side; veins partly streaked with hair brown; cilia whitish, with some hair brown scales at base.

*Male genitalia*: abdomen without basal hair pencils; uncus stout, somewhat curved at base, then almost straight and tapering to a slightly curved point, covered with hair on upper side; tergite moderately broad, almost parallel, moderately chitinised, more strongly so along the edges, posterior edge fringed with long hair-like scales; sternite rather short, narrow, well chitinised, terminating in a rather long roundly pointed saccus, anus slightly chitinised below; valve rather narrow, narrowest just before middle, broadest and best chitinised at basal half, terminal half less chitinised except along costa (unfortunately both valves had the very tips damaged, but at the tornus one of the terminal corona bristles is still preserved, so I suspect the termen to be about as oblique as in *pallidicolor*, but not as broad; this is indicated by the dotted line in the illustration); terminal inner surface densely covered with long hair, remainder more sparsely so, outer surface covered with bifid hair-like

scales; sacculus rather short, terminating in a irregularly shaped well chitinised clavus, which has some short bristles at tip; harpe well chitinised, not firmly connected with end of sacculus, of almost even width, projecting a little beyond costa, incurved, with a broad base and with short hairs on the outer side; ædæagus stout, well chitinised, slightly arched, terminating in a long well chitinised lobe, terminally covered with short teeth, gradually merging into vesica; vesica with two lobes, each terminating in a broadly based cornutus, one cornutus long and very stout, the other half that thickness and somewhat shorter; between them an oval, elongated, heavily chitinised patch (cornutus?), edged for the greater part with strong teeth; vesica partly finely punctulated.

This species resembles in colouration *pallidicolor* somewhat, but the very distinct markings differentiate it, from all the species recorded from South Africa. Moreover, the genitalia differentiate it at once from the other South African Cuculliids by the oval chitinised patch edged with teeth.

*Exp.* 35 mm. *Hab.* Male type Bloemfontein (Irving), 2-III-'21. Only one specimen is known to me.

#### Species auctorum.

*Cucullia leucopis* Hmps., Cat. Lep. Phal. VI., p. 28, pl. XCVI. fig. 26; Gaede, Seitz Gross-Schmett. vol. XV. p. 55, pl. 7 (1934).

I have seen two specimens in the British Museum belonging to this species: the female type from Grahamstown and another specimen from the Transvaal.

*Cucullia clausa* Wlk., Cat. XI. p. 657 (1857); Hmps., Cat. Lep. Phal. VI. p. 42, pl. XCVII. fig. 3 (1906); Gaede, Seitz Gross-Schmett. XV. p. 56, pl. 7 (1934).

The type of this species is in very bad condition and is from an unknown locality; Hampson gives it as "probably from South Africa", without giving any reason, so it is quite well possible that it is not from South Africa, seeing that it has not been found since.

#### Genus EMPUSADA Hmps. (Figs. 2, 3, 4.)

*Empusada* Hmps., Cat. Lep. Phal. VI. p. 85 (1906); Gaede, Seitz Gross-Schmett. XV. p. 57 (1934).

*Empusa* Hübn., Verz. p. 247 (1827), preocc., Ill. Orth. (1798). Type *lactea* from Europe.

Description from *hutchinsoni*.

Proboscis strongly developed; palpi obliquely upturned, reaching beyond frons, 2nd joint about twice first joint, 3rd joint about half of first joint and smoothly scaled, 1st and 2nd joint evenly fringed in front with long appressed scales and with a few laterally pointed



hairs from 1st and 2nd joint; frons roundly bulging on upper side and with a small ridge above proboscis, covered with loose fitting scales and hairs mixed; scaling of vertex similar; antennae simple, 1st joint without a tuft; eyes large and rounded; fringe consisting of a few over-hanging spreading hairs; tegulae forming a pronounced hood, pointed and somewhat ridged in the middle; thorax and patagia covered with hair-like scales and hairs mixed and without a crest; abdomen without crests, covered with scales, basal two-thirds slightly covered with long hairs, mainly situated on anterior edge of each segment; tibiae and femora covered with scales and hair-like scales mixed and fringed with long hair posteriorly; tarsi with three rows of rather long spines; hindtibia with four spurs; outer spur a little shorter than half of inner; all spurs sharply pointed, tips without scales. *Forewing*: elongate, with costa strongly arched at apical third, termen very oblique and almost straight, innermargin straight; cell a little over half of wing; R1 from well beyond middle of upper median; R2 and R3 on a stalk of a little over one-fourth of R2 and from two-thirds origin of R1 and upper angle; R4 and R5 stalked for one-sixth of R5; R3 anastomosing with R4 from end of stalk R4 and R5 for one-third of free part of R4, thus forming a long narrow areole; M1 from upper angle; upper DC fairly strong, sharply incurved into cell as far as a little beyond origin of R1, thus forming the inner edge of the silvery white fascia of wing; M2 and M3 almost from a point; C1 well remote from lower angle; C2 from about three-fourths of lower median; A2 simple at base, almost straight. *Hindwing*: almost semicircular, apex well rounded, termen a little oblique and somewhat incurved, tornus rounded into inner margin, costa straight; cell much less than half of wing; Sc very shortly anastomosing with upper median at one-third thus forming a narrow basal cell; RS and M1 very shortly stalked; DC very weak, strongly angled into cell as far as origin of C2; M2 obsolescent and from one fourth of DC; M3 and C1 shortly stalked; C2 from two-thirds lower median; A2 and A3 almost straight. Forewing on underside with a dense fringe of long hair overhanging the cell and with a smaller one from middle of cell.

*Male genitalia*: base of abdomen without lateral coremata; uncus stout, gradually tapering towards tip, strongly curved at basal third, then upcurved beyond middle and ending in a fine down-curved point, upper two-thirds with long hair, longest at middle; tergite moderately broad, of almost even width, rather weakly chitinised, a little stronger along anterior edge; sternite very narrow but more chitinised than tergite, ending in a short roundly pointed saccus; lower part of anus slightly chitinised and finely granulated; valve of almost even width, long and rather narrow, obliquely rounded at termen, without a corona but with some rather

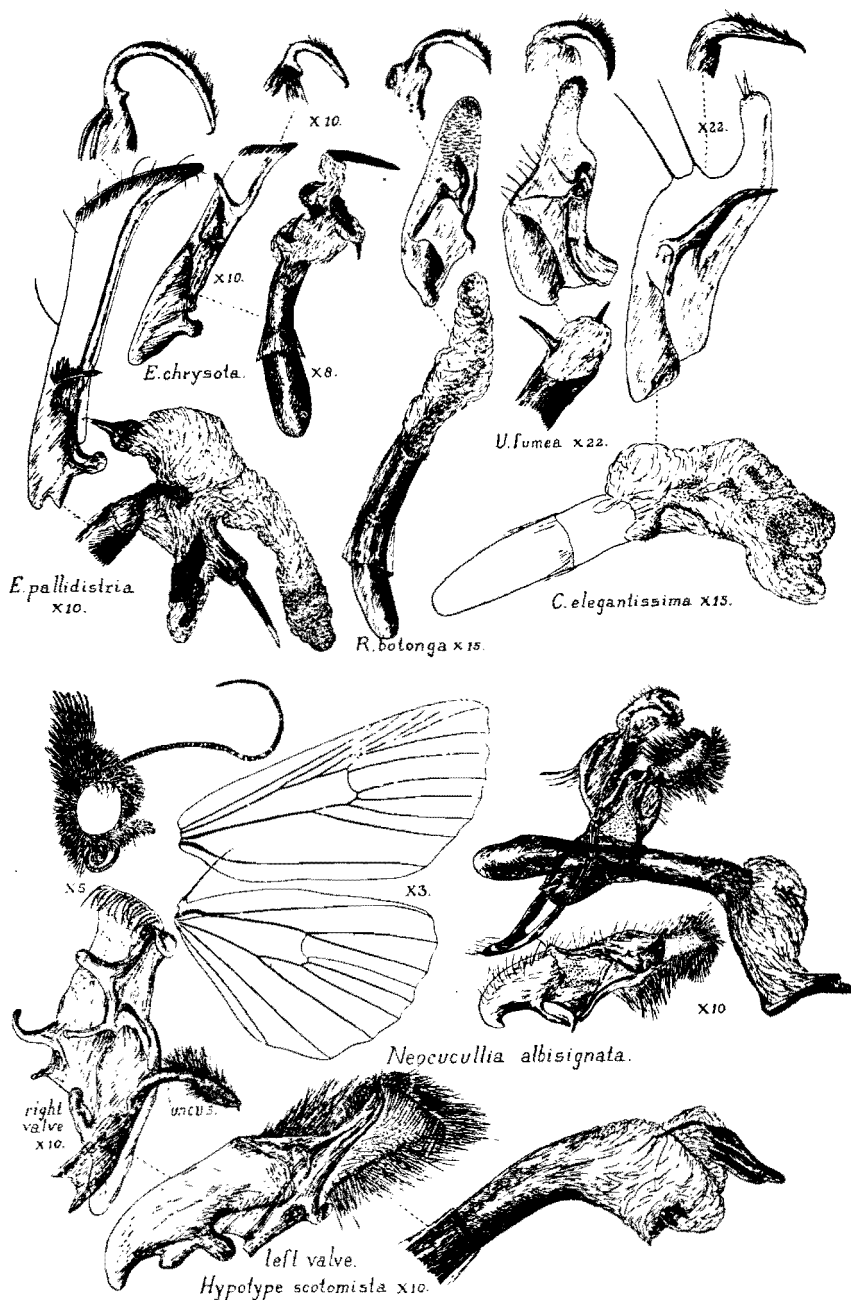


Fig. 3 Uncus, left valve and penis of *Empusada pallidistria*, *E. chrysota*, *Rhodochlæna botonga*, *Ulochlæna fumea*, *Charidea elegantissima*; head, wing venation and ♂ genitalia of *Neocucullia albisignata*; uncus, right- and left valve and terminal portion of penis of *Hypotype scotomista*.

long widely spaced bristles, which are continued along inner margin; basal half of valve rather weakly chitinised, terminal half even less chitinised and sparsely covered on inner side with short papillated hairs; outer side of valve well covered with long hairs and hair-like scales mixed; sacculus rather long and narrow and with a short irregularly shaped clavus, covered on outer side with short hairs; at end of sacculus, above inner margin, a well chitinised harpe, strongly angled at middle, just reaching to costa, basal half rather thick, then tapering to a fine point, outer edge at middle with some short hairs; ædæagus weakly chitinised, of almost even width, rather short, ending in two slightly chitinised lobes, which merge into the vesica and of which the longer one forms a chitinised patch on the vesica; manica finely granulated; vesica with four lobes, of which one is long and terminally granulated; the remaining three lobes are short and each is provided with a stout broadly based cornutus; two cornuti of almost even length, one almost twice that length and somewhat curved.

The male genitalia of this species are hardly typical of the genus, as compared with the other three species which follow: the uncus has a peculiar shape and is evenly curved in the others, where also the valve has a very oblique termen and a distinct corona; the armature of the vesica, however, shows considerable relationship.

Seven species have been placed in this genus which do not occur in South Africa, one from Argentine, five from Europe, one from Madagascar; the five South African species may be distinguished as follows:

- 1a. Forewing with a silvery white fascia in medial fold to termen of wing ..... 2
- b. Forewing without a silvery white fascia ..... 3
- 2a. Silvery white fascia from well before origin of C2 to termen; below it, and extended below lower median till base of wing, a broad rust brown irroration ..... *hutchinsoni*
- b. Silvery white fascia from above origin of C2, no distinct rust brown irroration below it ..... *argentivitta*
- 3a. Forewing with a black streak on lower median and with a grey-white patch below end of cell ..... *pyrostrota*
- b. Forewing without such a black streak and without grey-white patch below end of cell ..... 4
- 4a. Forewing with two or three black points in end of cell ...  
..... *chrysota*
- b. Forewing without black in end of cell ..... *pallidistria*

**Empusada hutchinsoni** Hmps. (Figs. 2, 4; pl. IV. 7.)

*Cucullia hutchinsoni* Hmps., Ann. S. A. Mus. II. p. 276 (1902).

*Empusada hutchinsoni* Hmpsn., Cat. Lep. Phal. VI. p. 87, pl. XCVIII. f. 13 (1906); Gaede, Seitz Gross-Schmett. XV. p. 57, pl. 7 (1934).

*Exp.* 45—46 mm. *Hab.* Type from Estcourt (Natal), also recorded from Mooi River. In my collection from Durban, Karkloof, Estcourt, Johannesburg and Salisbury; in January, March and December.

***Empusada argentivitta* Hmpsn. (Fig. 2; pl. IV. 8.)**

*Empusada argentivitta*, Hmpsn., Cat. Lep. Phal. VI. p. 87, pl. XCVIII. f. 14 (1906); Gaede, Seitz Gross-Schmett. XV. p. 57 (1934).

*Male genitalia:* abdomen without basal coremata; uncus very stout, broadest beyond middle, rather suddenly tapering to a slightly curved point, strongly curved beyond base, then almost straight, terminal half with long hairs above; tergite of almost even width, moderately chitinised, a little more so along anterior margin; sternite very narrow, a little more chitinised, ending in a very short saccus; anus slightly granulated below, but hardly chitinised; valve of almost even width, slightly narrower at middle on account of somewhat incurved costa and inner margin, broadening towards apex, termen oblique, slightly arched, and with a corona of closely fitting bristles; most of the valve rather moderately chitinised, covered on inner side with long hair, on outer side with long hairs and scale-like hairs mixed, inner margin with three widely placed bristles; sacculus rather long, narrow and with a subovate clavus with short hairs on outer edge; at end of sacculus from above inner margin an almost straight, narrow, weakly chitinised harpe, projecting beyond costa and somewhat spatulate at tip; ædæagus weakly chitinised, rather stout and with two lobes merging into vesica; vesica with five lobes, four of which have a terminal cornutus, all broadly based, one cornutus about twice as long as the two others and all three very stout; the fourth is much shorter than the two and thinner (in the preparation, and as shown in the illustration, it is seen from the base only); near base of vesica an elongated ribbon-like patch, which is well chitinised and terminates in a rather heavily chitinised, rounded and curved portion, densely beset with short teeth; a long lobe from vesica without cornuti, but terminally finely granulated.

*Exp.* 36—43 mm. *Hab.* type from Transkei, also recorded from Maseru. In my collection from Bloemfontein, Thabanchu, New Hanover, Pretoria and Matlala (Zoutpansberg District); II., IX.—XI.

**Empusada chrysota** Hmps. (Fig. 3; pl. IV. 9.)

*Empusada chrysota* Hmps., Ann. S. A. Mus. II. p. 277 (1920); Hmps., Cat. Lep. Phal. VI. p. 88, pl. XCVIII. f. 17 (1906); Gaede, Seitz Gross-Schmett. XV. p. 58, pl. 7 (1934).

In this species the DC of the forewing is somewhat incurved and obsolescent, in the hindwing the DC is also incurved and a little stronger than in forewing; RS and M1, M3 and C2 are from the angles and not stalked; otherwise the venation is similar to that of the previous species.

*Male genitalia:* abdomen without basal coremata; uncus similar to *argentivitta* but apical half tapering more evenly; tergite tapering to a point, broadest at middle, moderately chitinised, fringed with long hairs posteriorly; sternite narrow, well chitinised, ending in a moderate saccus; anus slightly chitinised below at base; valve of almost even width, slightly wider at apex, termen oblique, straight and with a corona of stout bristles; terminal half of valve, except along costa, weakly chitinised, well covered on inner side with moderate hair, on outer side with long hair and hair like scales mixed; saccus moderately long, well chitinised and with a very broad rounded clavus, which has an irregular surface and short hairs along the edge; a short, rather weakly chitinised harpe from well beyond saccus and from well above inner margin, where the inner margin is strongly chitinised; harpe slightly contracted at middle, rounded at tip and just reaching costa; a fairly well chitinised ridge from base of harpe and one from basal portion of costa, which join well beyond middle of valve, forming a rather long curved lobe, projecting beyond inner margin (this additional lobe I have not found in the other three species); ædæagus rather stout, well chitinised, terminating in a rather broad lobe, which is finely granulated and gradually merges into the vesica; vesica with three lobes, each provided with a cornutus; one cornutus very short and not broadly based, the second about twice as long, much stouter and broadly based, the third about twice as long as the second, stouter and broadly based; between these lobes the vesica has a broad, curved, well chitinised patch, beset with minute teeth and terminating in a long rather broad and solid looking chitinised object, densely beset with strong teeth (this may almost be considered a cornutus but, in the two preparations made, I did not succeed in evaginating it from the vesica, as it seemed to adhere over the whole surface to the vesica); an additional long lobe without cornutus (this is not shown in the figure, because I did not succeed in evaginating it, but it is clearly visible within the base of the vesica and seems to be finely granulated).

*Exp.* 38—41 mm. *Hab.* Type from Estcourt; also recorded

from Durban and German East Africa; in my collection from Thabanchu, Umkomaas, Durban, Waterval Onder, Pretoria; II.—IV., XI., XII.

***Empusada pallidistria* Feld. (Fig. 3; pl. IV. 10.)**

*Cucullia pallidistria* Feld., Reise Nov. pl. 108, f. 54 (1874).

*Empusada pallidistria* Hmps., Cat. Lep. Phal. VI. p. 88, pl. XCVIII. f. 18 (1906); Gaede, Seitz Gross-Schmett. XV. p. 58, pl. 7 (1934).

Venation similar to that of *chrysota*.

*Male genitalia*: base of abdomen with lateral coremata covered with very long hair hidden in lateral pockets; uncus very stout, heavily chitinised and longer than in the other three species, strongly curved at basal third, then slightly curved and gradually tapering to a fine curved point, short bristly hairs on upper side; tergite rather broad, but somewhat short, moderately chitinised, heavily so along anterior edge, posterior edge fringed with long hairlike scales most of which are bifid at tip; sternite narrow, ending in a rather broad saccus, well chitinised; anus strigulated and granulated on the strigulae over most of their lengths and apparently moderately chitinised, but it did not take any stain; valve of almost even width but suddenly broadening towards apex, where the costa is upturned; termen very oblique, arched and with a corona of broad, closely fitting bristles, some curved bristly hairs on outer side of termen and a few similar bristles on outer margin; basal portion of valve before middle moderately chitinised, remainder of valve except costal area rather membranous, covered on inner and outer side with long hairs; sacculus about one-third of valve, well chitinised and with a rather long and broad well chitinised clavus; immediately beyond the sacculus and a little above the inner margin a well chitinised harpe of even width, slightly curved, just projecting beyond costa and acuminate at tip; aedeagus rather short and rather weakly chitinised, connected terminally to the vesica by means of two broad lobes, one of which is well chitinised, the other less so but punctulated; vesica with two short lobes, each with a cornutus, both of which have a tubular broad base, which is heavily chitinised and gradually merges into the vesica; one cornutus is about half the length of the other (both unfortunately had the tips broken off in the preparation); another rather short lobe has a chitinised broad patch which seems to be double and joined up at base so as to become somewhat boat-shaped, partly covered with short teeth, then it becomes wider, less chitinised, more densely beset with teeth and curved (this structure is probably homologous to the one described in *chrysota* and is feebly developed in the other two species); in

addition a much longer lobe, densely beset with minute teeth over the terminal half.

*Exp.* 41—48 mm. *Hab.* Type from South Africa (without precise locality); also recorded from Kokstad and Maseru; in my collection from Harrismith, Noordkaap (Barberton District) and Johannesburg, collected in April.

### ***Empusada pyrostroma* Hmps.**

*Empusada pyrostroma* Hmps., Cat. Lep. Phal. VI. p. 88, pl. XCVIII. f. 15 (1906); Gaede, Seitz Gross-Schmett. XV. p. 58, pl. 7 (1934).

*Exp.* 42 mm. *Hab.* Johannesburg; so far only the female type is known.

I have not come across this species yet. According to the description and the figure it resembles *chrysota*, but is distinguished from it by a black streak on the lower median and a slight black streak above inner margin before middle.

### **NEOCUCULLIA gen. nov. (Fig. 3.)**

Type *albispinata* spec. nov.

Palpi as in *Cucullia*, somewhat more porrect; proboscis well developed; frons less bulging than in *Cucullia* and with a slight ridge above proboscis; frons and vertex covered with long spreading scales; antennae in male simple, first joint tufted with scales in front and above; tegulae forming a distinct but short hood, mainly covered with scales; patagia with long hair-like scales and hairs mixed; metathorax with a short crest; basal segment of abdomen with a crest, second and third segment without a crest; abdomen covered with scales; foretibia without a claw; all tibiae fringed posteriorly with long spreading hairlike scales and hairs mixed; hindtibia with four spurs, middle spurs a little longer than terminal spurs, outer spur about half of inner; tarsi with three parallel rows of spines on inner side. *Forewing*: shorter and broader and with termen less oblique than in *Cucullia*; costa almost straight, arched towards rounded apex; termen slightly arched between M1 and C2 and slightly crenulated; tornus well rounded; inner margin straight, except for a slight bulge before middle; cell a little over half of wing; venation as in *Cucullia*, but R5 from end of areole (this, however, is frequently found in other species of *Cucullia*); M1 remote from areole; upper DC less incurved than in *Cucullia* and C2 a little nearer to lower angle. *Hindwing*: shorter than in *Cucullia* and termen more arched; cell a little over half of wing; costa somewhat arched at middle; termen slightly crenulate; inner margin slightly bulging at A3; Sc upcurved at base, then downcurved and anastomosing with upper median for a short distance, thus forming

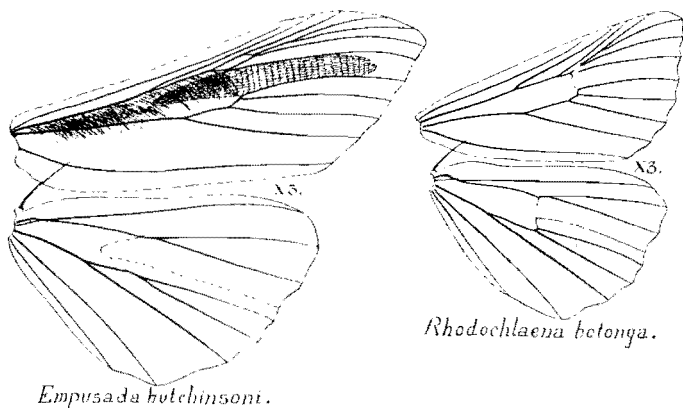
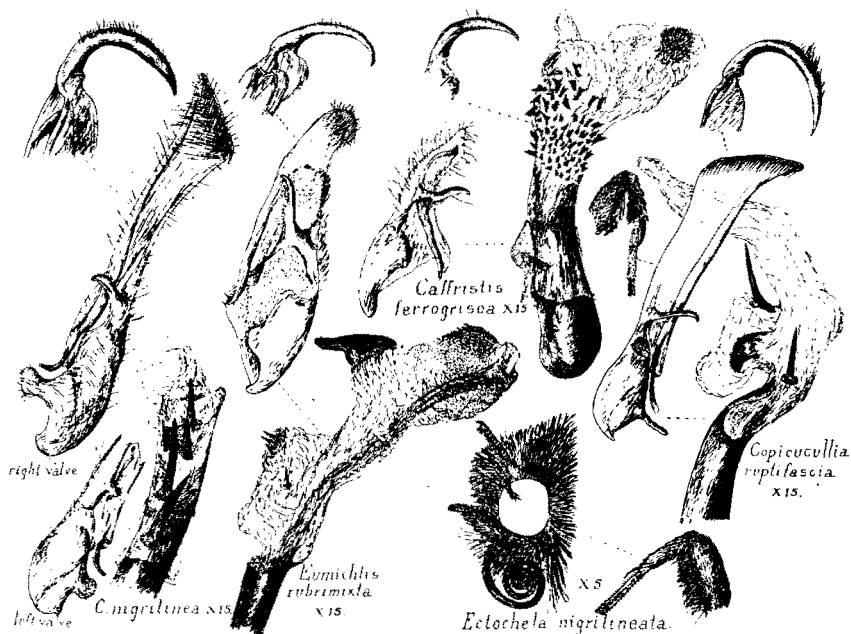


Fig. 4. Uncus, valve and penis of *Cucullia nigrilinea*, *Eumichtis rubrimixta*, *Caffristis ferrogrisea*, *Copicucullia ruptifascia* (also with fore tibia), *Ectocheila nigrilineata* (also head and fore tibia); wing venation of *Empusada hutchinsoni* and *Rhodochlaena botonga*.



a basal areole, then straight, slightly curving towards tip; RS and M1 from upper angle; M2 very weak but still visible and from about three-fourths of DC; upper DC incurved, weak; C1 a little more remote from M3 than M2 is; C2 from before two-thirds of lower median; A2 and A3 almost straight.

*Male genitalia:* abdomen without hair pencils at base; uncus stout, strongly curved, broadest at terminal half and obliquely rounded at tip; from middle of upper side a sharply pointed, somewhat curved process, as thick as the uncus itself; long dense hairs along the sides, shorter ones on upper side of terminal half, still shorter ones on under side; tergite rather broad, well chitinised, especially anteriorly, posterior edge fringed with hair-like scales; sternite well chitinised, rather long and curved, gradually forming a short saccus; under side of anus slightly chitinised; valve irregular at costa and inner margin, basal two-thirds rather broad and well chitinised, then suddenly contracted, making terminal third rather narrow and with the upper and lower edge nearly parallel, termen oblique and with a slight corona; this terminal third is weakly chitinised, covered on upper outer side with a series of broad scales, which seem to be somewhat chitinised and hollow, as they retain air (possibly this is part of the corona), remainder of outer side densely covered with long hair-like scales; sacculus forming nearly one-third of valve in length but less broad and provided with a long well chitinised clavus, which has a flattened terminal lobe pointing outwardly; inner marginal area beyond sacculus broadly chitinised and from two-thirds of this originates a broad, rather flattened, well chitinised harpe, which is of somewhat different shape in right and left valve, as indicated in the illustration; costa very broadly chitinised, somewhat produced beyond middle, covered with long hairs on inner side and contracted to an erect process, continued a little beyond the less chitinised terminal part of valve; ædæagus rather long, almost straight, basal portion slightly thicker, terminally ending in a broad heavily chitinised lobe, which is provided with three rows of short teeth; another narrow long lobe, continued over the greater length of the vesica and articulated to the large cornutus, heavily chitinised and densely covered on outer side with minute teeth; vesica with four sharply pointed closely situated cornuti, at tip a very broad, long, heavily chitinised, flat cornutus, which appears to have the outer edges curved backwards in opposite directions over nearly the whole length.

This genus, though closely allied according to the venation to *Cucullia*, has totally different male genitalia; the peculiar structure of the uncus is not found in any of the *Cuculliids*; a similar tooth-like projection on upper side of uncus that resembles the one of this genus is only found by me in *Ramesodes divisa*, but

is there much shorter, and in *Caradrina melanospila*, where it is minute. Only one species in this genus.

***Neocucullia albisignata* spec. nov. (Fig. 3; pl. VI. 1, 5.)**

Head, thorax and forewing hair brown, more or less irrorated with fuscous-black; palpi well irrorated with black; frons with a transverse ridge of black scales; tufts of fuscous scales between antennæ; at base of tegulæ a broad black fascia; crest on metathorax well irrorated with black; thoracic crest hair brown, irrorated with black; abdomen drab, well irrorated with fuscous; underside and hairs on legs hair brown; hindwing white. *Forewing*: a few black scales at costa, representing the subbasal; antemedial beginning at costa as a rather broad diffused black fascia, oblique towards orbicular, then as a narrow well defined line from lower median, strongly outwardly dentate on inner marginal fold, then slightly dentate below A2; before it at costa a small diffused black macula, below this in cell a narrow V-shaped mark, followed by a diffused black semicircular line, space in cell before the V-shaped mark and before the antemedial irrorated with white scales; immediately below this a well defined black striga on inner marginal fold from base to just before the antemedial; orbicular large, round, defined on upper and inner side by a narrow black line, joining the antemedial and continued as a curved black line well below lower median to beyond origin of M3, slightly dentate on C1, centre of orbicular and greater part of reniform wood brown; reniform only indicated on upper side by a narrow black curved line with a long macula at costa before it and touching the orbicular; immediately beyond this a small black macula at costa, being the origin of an ill-defined pale postmedial line, which is excurved from R2 to C2 and slightly defined on inner side by a hair brown line, which becomes a broad black lunule beyond C2; this lunule has a black fascia before it in inner marginal fold, which connects it to the large tooth of the antemedial line; immediately beyond the lunule a conspicuous white lunulated macula; below this the postmedial is as above the white mark; immediately beyond this a black fascia below C2, nearly reaching termen, continued above C2, reaching termen, where it merges with the terminal lunule; above C1 a similar fascia, but not quite as long; veins R4 to M3 lined with black, interrupted by a hair brown clouding where the subterminal line should be; all other veins, including A2, black, irrorated with pale grey; a terminal series of narrow black lunules between the veins; cilia hair brown, basal half slightly darker and with a very narrow pale basal line. *Hindwing*: most of the veins irrorated with drab and with an elongated cell-spot shining through from the underside; a broad terminal border of a drab irroration diffused on inner side; cilia whitish, terminally but irregularly sprinkled

with drab. *Underside*: forewing, except inner marginal area which remains bluish white, densely irrorated with hair brown; hindwing slightly irrorated with hair brown on costal area and terminal border, densely so at end of cell, forming the cell-spot, a broad postmedial irrorated line.

*Exp.* Male Type 35 mm.; female type and cotype 38 mm. *Hab.* male type from Durban, 25th February 1919 (E. L. Clark); female type from Bethlehem (Orange Free State), (v. d. Merwe), 6th March 1918; female cotype from Rietvlei (Natal), (van Otto), January 1918.

### Genus COPICUCULLIA Smith (Fig. 4.)

*Copicucullia* Smith, Tr. Am. Ent. Soc. XXI. p. 84 (1894); Hmps. n., Cat. Lep. Phal. vi. p. 9 (1906); Gaede, Seitz Gross-Schmett. XV. p. 5 (1934).

Type, *eulepis*, from N. America.

Description from *ruptifascia*.

This genus differs from *Cucullia* in the slightly more upturned palpi and a claw at the end of the foretibia; the venation of both wings is practically the same as in *Cucullia* and so is the shape of the wings.

*Male genitalia*: a pair of lateral hair brushes, partly hidden in pockets at base of abdomen; uncus stout, slightly thicker at one-third, then tapering to a fine point, basal half strongly curved, terminal half less so, moderate hairs on upper side; tergite moderately chitinated, suddenly narrowing at basal third, fringed posteriorly with long hair-like scales; sternite narrow, well chitinated, ending in a short saccus; valve rather narrow, of almost even width, broadening at tip, apex very much produced, a corona composed of closely situated bristles along termen, basal third of valve and area along costa moderately chitinated, remainder less so; inner side of valve sparsely covered with long hairs, more densely near termen, outer side covered with long bifid hair-like scales and with short curved scales along terminal area, simple hair-like scales along inner margin; sacculus rather short, provided with a rather long narrow clavus; well beyond sacculus and remote from inner margin a well chitinated rather flat harpe, curved at tip and there covered with short hairs and projecting for nearly half its length beyond costa; ædæagus moderately stout, well chitinated, slightly curved beyond middle, terminating in a flat lobe, which is finely punctulated and gradually merges into vesica; vesica with two lobes, each terminating in a stout, broadly based, finely pointed cornutus; between them, at base of another short lobe, a roundly pointed chitinated patch, covered on outer side with short teeth; another long terminal lobe finely punctulated for the greater part.

A small genus; six representatives in North America; one from Algeria, two from Western Asia and one from South Africa.

***Copicucullia ruptifascia* Hmps. (Fig. 4; pl. V. 12.)**

*Copicucullia ruptifascia* Hmps., A.M.N.H., 8, IV. p. 384 (1909); Gaede, Seitz Gross-Schmett. XV. p. 55 (1934).

*Exp.* 34 mm. *Hab.* type from White River. In my collection from Thabanchu, Bloemfontein, Bultfontein, Pretoria and Bulawayo; I.—III., X.—XII.

This species may readily be confused with *Cucullia consimilis*, but is most easily distinguished from this by the claw on the foretibia and the more even bluish colour of the forewing.

**Genus RHODOCHLAENA Hmps. (Figs. 3, 4,)**

*Rhodochlaena* Hmps., Cat. Lep. Phal. VI. p. 131 (1906); Gaede, Seitz Gross-Schmett. XV. p. 58 (1934).

Type, *botonga*.

Proboscis rudimentary; palpi obliquely upturned, third joint porrect, loosely covered with hair-like scales and hairs mixed, somewhat fringed in front of first and second joint, second joint about twice first joint, third joint about one-fourth of second joint and less densely covered; eye rounded and with a few overhanging hairs, which are so short that they may belong to the hairs of the frons (if that is so, this genus should come in the *Acronictini* and I have little doubt that this would be more correct, the shape of the wing, the absence of a hood and the structure of the genitalia point to this); frons rounded, loosely covered with long hair-like scales; scales on vertex broader and shorter, but also loosely placed; antennæ in male bipectinate, serrate in female, longest pectination over twice shaft, gradually diminishing in length towards tip; first joint of antennæ with a short frontal tuft; thorax, tegulæ and patagia rather loosely covered with long scales; tegulæ not forming a hood; metathorax with a broad central crest; abdomen without any crests, but with some hairs on the first two basal segments, otherwise covered with appressed scales; femora and tibiæ covered with scales, posteriorly fringed with hairs; foretibia without a claw; hindtibia with four spurs; outer spur a little longer than half of inner spur. *Forewing*: rather broad, subtriangular, termen almost erect and slightly crenulated, costa straight, apex and tornus rounded, inner margin slightly arched near base; cell well over half of wing; R1 from well beyond middle of upper median; R2 and R3 stalked for one-fourth of R2 and from three-fourths origin of R1 and upper angle; R4 and R5 stalked for less than one sixth of R5; R3 anastomosing a little beyond its stalk for one-third of its free length with the free part of R4, thus forming a moderate, narrow areole; M1 well remote from

areole; upper DC obsolescent; M2 from one-fourth of DC; C1 nearly twice as far from M3 as M2 is; C2 from two-thirds lower median; A2 simple at base, slightly curved. *Hindwing*: subtriangular, with costa arched at base and before apex, termen well arched, somewhat crenulate, inner margin strongly arched, apex and tornus rounded; cell a little less than half of wing; Sc anastomosing for a short distance and a little beyond base with the upper median, thus forming a small basal cell; RS and M1 very shortly stalked; M2 very weak but present and from one-third of DC; DC almost straight, upper DC obsolescent; C1 a little remote from M3; C2 from a little beyond middle of lower median; A2 and A3 almost straight.

*Male genitalia*: abdomen without coremata at base; uncus stout, broadest at middle, tapering to a fine point, well curved near base, slightly so along terminal two-thirds, upper side with short hairs; tergite rather narrow but somewhat lobate posteriorly immediately below uncus, rather weakly chitinised; sternite very narrow, short and weakly chitinised, terminating in a broad, rather long, rounded saccus; anus very slightly chitinised below at middle; valve rather short, gradually tapering towards the broadly rounded tip, where there are along the edge some isolated bristles but no real corona; most of the valve weakly chitinised, covered on inner side by rather short papillated hairs, on outer side with longer hairs and scales mixed; sacculus rather small, weakly chitinised and *without a clavus* (this also may be an indication that it is not a true *Cuculliid*); from base of sacculus a rather long, well chitinised process connected to base of harpe, which has another short process connecting the harpe to the costa, where the latter is moderately chitinised; harpe rather flat, of almost even width, terminating in a point, somewhat curved inwardly and not extending beyond the valve; ædæagus rather weakly chitinised, of almost even width, slightly curved at middle and with isolated short spines along its outer edge and partly fixed on the vesica; vesica tubular with a slightly chitinised ridge at middle and with a central spiral tube, which is finely punctulated (it is possible that this spiral tube is fully extended when copulation takes place).

Only one species is placed here from South Africa and another one from the Congo.

### ***Rhodochlæna botonga* Feld. (Figs. 3, 4; pl. IV. 11.)**

*Dianthæcia botonga* Feld., Reise Nov. pl. 109, f. 28 (1874).

*Rhodochlæna botonga* Hmps., Cat. Lep. Phal. VI. p. 131, fig. 36 (1906); Gaede, Seitz Gross-Schmett. XV. p. 58, pl. 7 (1934).

*Heliofobus perrubra* Hmps., Ann. S. A. Mus. II. p. 279 (1902).

*Exp.* 31—33 mm. *Hab.* Male type from Knysna, female type of

*perrubra* from Transkei. In my collection from Stellenbosch and Krantzklouf; III., X.

### Genus *LEUCOCHLÆNA* Hmps. (Fig. 2.)

*Leucochlæna* Hmps., Cat. Lep. Phal. VI. p. 132 (1906); Gaede, Seitz Gross-Schmett. XV. p. 58 (1934).

Type, *oditis* = *hispidia* from Europe<sup>1</sup>).

Description from *leucogonia*.

Proboscis rudimentary; palpi porrect, not projecting beyond hairs of frons, covered with loosely fitting hair-like scales and hairs mixed, second joint a little longer than first joint, third joint very small, hidden in the hairs; frons smooth, covered with long tufted hair-like scales and hairs mixed, extended over vertex; eyes large, suboval and with some overhanging hairs, which I really think belong to the covering of the frons; antennæ of male shortly bipectinate, in ♀ simple; longest pectination a little over diameter of shaft, gradually diminishing towards tip in length; tegulæ and patagia covered with long usually bifid hairs, without forming a hood; metathorax somewhat tufted with long hair-like scales (the prothorax is supposed to have a crest, but I fail to find it); abdomen without a distinct crest but, apart from the scaly covering, long hairs on upper side, especially towards base; a series of lateral tufts on abdomen, mainly composed of scales; femora and tibiæ densely tufted with hair-like scales and hairs mixed; foretibia without a claw; hindtibia with four spurs; outer spur over half of inner. *Forewing*; shape and venation similar to that of *Rhodochlæna* but termen a little more oblique and less crenulated, areole a little longer, M1 more remote from areole and C1 more remote from M3. *Hindwing*: as in *Rhodochlæna* but termen less crenulated; R.S. and M1 remote, M2 remote from M3 and C1 a little closer to M3.

*Male genitalia*: abdomen without coremata; uncus very stout, rather short, broadest before middle, tapering towards the rather blunt tip, curved near base, then almost straight and without hairs on upper side; tergite of almost even width, moderately chitinised, except along anterior margin, posterior margin undulating, forming two small lobes and densely fringed with very long hair; sternite narrow, only broader at base, where it forms a short saccus; valve rather short, broadest at basal half, somewhat contracted beyond middle, broadly rounded at tip, where there is a narrow area covered with rather long bristly hairs; terminal half of valve rather weakly chitinised, covered on inner side with short hairs, densely so on outer side with long hairs and hair-like scales; sacculus

<sup>1</sup>) The type of this genus is not *fallax*, as given by Gaede (l. c. p. 58) for Hampson in the original description definitely designates *hispidia* as the type.

rather short and rounded, without a clavus; harpe very broad at base and long, tapering to a somewhat blunt point, curved inwardly at middle but remaining within the area of the valve; its base has two short branches, one connecting it to base of sacculus, the other to base of costa; ædæagus rather short, stout, weakly chitinised; vesica subglobular, with two minute broadly based thorn-like cornuti.

The remark made under *Rhodochlæna* as regards its tribal position also holds here; it is probably better placed in the *Acronicti*. I am not even sure that *leucogonia* is properly placed here for the description and figure given of the genotype by Pierce do not quite support the inclusion of the South African species. According to him the harpe is placed differently and the vesica has six or seven conuti united at the base and in addition a small bulbous cornutus. A more detailed study of all the species placed in this genus is essential in order to come to a definite conclusion.

In addition to the South African species two species are placed here from the Palæarctic region, one from Algeria, one from Kashmir and one from Mexico.

#### ***Leucochlæna leucogonia* (Hmps. (Fig. 2; pl. IV. 12.)**

*Heliofobus leucogonia* Hmps., Ann. S. A. Mus. III. p. 426 (1905).

*Leucochlæna leucogonia* Hmps., Cat. Lep. Phal. VI. p. 136, fig. 39 (1906); Gaede, Seitz Gross-Schmett. XV. p. 58, pl. 7 (1938) as synonym of *Noctua trinota* H.-S. Lep. Exot. f. 126.

Gaede sinks *leucogonia* as a synonym of *trinota* H.-S., which, according to Walker (Cat. IX. p. 158), is from the Cape, but Gaede only mentions Mashonaland and Natal as the locality of this species, which agrees with the localities given by Hampson. As I do not possess Herrich-Schaeffer's work I cannot possibly verify whether Gaede is correct, so I provisionally keep to the name given by Hampson. Curiously the name *trinota* H.-S. is not to be found in any of the volumes of Hampson's catalogues.

*Exp.* 24—46 mm. *Hab.* Type from Mashonaland; also recorded from Krantzkloof. In my collection from Emjanyana, Umtata, Umkomaas, Durban, Empangeni, Nkandhla Forest, Sarnia, Krantzkloof, Modderpoort, Mahuba's Kloof; I.—IV., XII.

#### **Genus *ULOCHLÆNA* (Fig. 3.)**

*Ulochlaena* Led., Noct. Eur. p. 96 (1857); Hmps., Cat. Lep. Phal. VI. p. 137 (1906); Gaede, Seitz Gross-Schmett. XV. p. 58 (1934).

Type: *hirta*, from Europe.

Description from *fumea*.

Proboscis absent; palpi oblique, third joint porrect, scarcely reaching beyond frons, second joint about one and a half times first joint, third joint about half of first joint, almost hidden in hairs, all joints covered with loose scales, first and second joint fringed with very long hair; frons smooth, covered with some scales and woolly hair mixed; vertex covered with long hairs; antennæ of male biserrate and shortly bi-fasciculated; eyes large, rounded, covered with some spreading eyelashes, which may however originate from the frontal hair-covering; tegulæ, patagia and thorax covered with long hairs and hair-like scales, which are very loosely placed; thorax without crests and without hood; abdomen without crest, covered with scales and with some long hairs on upper side, densely so at base; foretibia without a claw; all tibiæ and femora covered with scales and fringed on outer side with long hairs; hindtibia with four spurs; outer spur a little shorter than inner spur, which is very long; thorax on underside densely covered with hair. *Forewing*: subtriangular, with costa slightly incurved, termen somewhat oblique and slightly arched at middle, inner margin arched at basal half, apex and tornus well rounded, cell well over half of wing; R1 from just beyond middle of upper median; R2 and R3 on a stalk of one-fourth of R2 and from two-thirds of origin of R1 and upper angle; R4 and R5 on a stalk of one-seventh of R5; R3 anastomosing with half the stalk of R4—R5 and with one-third of free part of R4, thus forming a rather long narrow areole; M1 from areole; M2 from less than one-fourth of DC; upper DC strongly angled inwardly at submedian fold and rather weak; C1 from M3 as far as M2 is; C2 from two-thirds of lower median; A2 simple at base but somewhat curved. *Hindwing*: semicircular, with costa almost straight but arched at base and apex, termen very oblique, well arched, and gradually merging into the well rounded tornus, inner margin well arched, apex roundly pointed; cell a little over half of wing; Sc anastomosing for a short distance with upper median well beyond base, thus forming a long narrow basal cell; RS and M1 very shortly stalked; M2 weak but present and from about one-third of DC; upper DC rather weak and sharply angled in submedian fold; M3 and C1 from upper angle; C2 from two-thirds of lower median; A2 and A3 almost straight.

*Male genitalia*: base of abdomen without coremata; uncus rather broad at base, tapering to a point, basal half strongly curved, terminal half less so, upper side densely covered with hair; tergite rather narrow at upper half, roundly bulging at lower half and provided posteriorly with a subtriangular lobe fringed with long hair, the whole tergite and uncus are weakly chitinised; sternite better chitinised, moderately broad, ending in a broad saccus; anus not chitinised; valve with basal two-thirds moderately broad, moderately



chitinised, with costa strongly arched, inner margin and part of termen almost parallel to it; the chitinised costa suddenly ends and becomes somewhat produced at two-thirds and the remaining third of valve becomes suddenly contracted, the upper and lower margin then remain parallel and form a round apex, the costal margin is somewhat incurved, the terminal margin excurved; terminal part of the valve hardly chitinised, covered on inner side with rather long papillated hairs and shorter but more crowded hairs towards tip, but without corona, outside covered with very long hair, at tip with curved scales; sacculus about half width of valve and extending from base to tornus, but without a clavus; innermargin beyond it with some bristly hairs; well below costa, and parallel to it, a well chitinised ridge reaching from base to costal lobe; just before this lobe a short roundly pointed process, directed inwardly (this probably represents the harpe) and immediately below it a narrow less chitinised process, connecting it to tornus; ædæagus stout, thickest at basal half, weakly chitinised but becoming more chitinised at tip on lower side; vesica very small, subglobular and with two broadly based, stout cornuti, of which one is about two-thirds of the other in length.

Of the seven species placed in this genus, the genotype is from the Mediterranean Region; one is from Algeria and Tunis only, and one other occurs in Tibet, of which Hampson remarks that it suggests an Agrotid genus. Of the four South African species placed here by Gaede, *schaeferi* is certainly wrongly placed, if my identification is correct (which I hardly doubt, seeing that the wings are very clearly marked) for the foretibia has a distinct claw. These four species may be distinguished as follows:

- 1a. Forewing with one or two pale maculæ ..... 2
- b. Forewing without pale maculæ ..... 3
- 2a. Forewing with a white macula in cell, connecting the white orbicular and reniform ..... *schaeferi*.
- b. Forewing with a small yellowish white macula across C1 and a larger macula from C2—M2 ..... *ferruginea*.
- 3a. Forewing with the antemedial and postmedial lines strongly dentated; hindwing tinged with brown ..... *sagitta*.
- b. Forewing with the antemedial and postmedial lines not strongly dentated; hindwing pale brownish grey ..... *fumea*.

***Ulochlæna fumea* Hmps. (Fig. 3; pl. IV. 13.)**

*Heliofobus fumea* Hmps., Ann. S. A. Mus. II. p. 280 (1902).

*Ulochlæna fumea* Hmps., Cat. Lep. Phal. VI. p. 140, fig. 42 (1906); Gaede, Seitz Gross-Schmett. XV. p. 59, pl. 7 (1934).

*Exp.* 20—32 mm. *Hab.* Type from Transkei: In my collection from Impetyeni Forest (Natal); VIII., IX.

***Ulochlæna schaeferi* Gaede.**

*Ulochlæna schaeferi* Gaede, D. ent. Zs. Iris, 29. pp. 101—123 (1915); Gaede, Seitz Gross-Schmett., XV. p. 59, pl. 7 (1934.)

A female specimen in the collection of the Transvaal Museum agrees in every respect with the description and figure given by Gaede, except that the hindwing of this specimen for the terminal half is suffused with hair brown, but the figure represents a male and in the description the darker hindwing of the female is mentioned; as the marking of the forewing is very characteristic I do not think there is any doubt about the correct identification, but the specimen before me has a distinct claw on the foretibia and it has the distinctive fringe of scales overhanging the eyes, as mentioned in this paper on p. 11A, moreover the palpi are quite different from those of *fumea*, the third joint being very long and having a knob-like thickening at the tip. I have no doubt that this species is better placed in *Centrarthra*, but as I have no male, I cannot fully prove this.

*Exp.* 28—30 mm. *Hab.* South West Africa. In Transvaal Museum, one specimen from Luederitz Bay in April.

**Species auctorum.**

***Ulochlæna reducta* Gaede.**

*Ulochlæna reducta* Gaede, D. Ent. Zs. Iris, 29, pp. 101—123 (1915); <sup>1)</sup> Gaede, Seitz Gross-Schmett. XV., p. 59 (1934).

This is probably a reduced form of *schaeferi*.

***Ulochlæna sagitta* Gaede.**

*Ulochlæna sagitta* Gaede, D. ent. Zs. Iris, 29, pp. 101—123 (1915); Gaede, Seitz Gross-Schmett. XV. p. 59, pl. 7 (1934).

*Exp.* 29 mm. *Hab.* South West Africa.

***Ulochlæna ferruginea* Gaede.**

*Ulochlæna ferruginea* Gaede, D. ent. Zs. Iris, 29, pp. 101—123 (1915). Gaede, Seitz Gross-Schmett. XV. p. 59 (1934).

*Exp.* 26 mm. *Hab.* South West Africa.

**Genus CHARIDEA Guen. (Fig. 3.)**

*Charidea* Guen., Noct. II. p. 60 (1852); Hmps., Cat. Lep. Phal.

<sup>1)</sup> As I have not been able to consult Gaede's paper in "Iris", I have been unable to ascertain the pagination for each of these species. (see also *Ectocheila*).

VI. p. 140 (1906); Gaede, Seitz Gross-Schmett. XV. p. 59 (1934).

Type: *elegantissima*.

Proboscis well developed; palpi obliquely upturned, third joint a little more porrect, reaching well above frons; second and third joint of almost even length, covered with appressed scales and fringed with long hair in front; third joint with appressed scales only; frons smooth, covered with hairs and hair-like scales mixed and forming a transverse ridge immediately before the antennæ; eyes suboval, large and with distinct overhanging cilia; antennæ of male bipectinate; longest pectination nearly three times shaft, gradually getting shorter to before tip; first joint of antennæ with a scale tuft mixed with hair in front and on upper side; vertex and thorax loosely covered with scales, mixed with hair-like scales; prothorax and metathorax with spreading crests; tegulæ not hooded but somewhat raised; abdomen with a basal crest on upper side and laterally fringed with hair; legs covered with long scales, tibiæ and femora fringed posteriorly with long hairs, forming a spreading tuft on the femora; foretibia without a claw; hindtibia with four spurs; outer spur about two-thirds of inner. *Forewing*: in shape and venation similar to *Rhodochlæna* but termen a little more oblique and areole much longer, about six times longer than its width. *Hindwing*: similar to *Rhodochlæna*, RS and M1 also very shortly stalked.

*Male genitalia*: abdomen without lateral coremata at base; uncus rather short, stout, tapering towards the slightly curved tip, strongly curved at base, then straight; tergite rather weakly chitinised, short and moderately broad, fringed with hair-like scales posteriorly, sternite better chitinised and longer than tergite, broadening towards base; anus somewhat chitinised ventrally; valve of almost even width for two-thirds of its length, then suddenly narrowing with a rounded curve to less than half its width, then roundly ending at termen; at end of broadest portion two remote, stout and long bristles, each situated on the somewhat raised margin; some bristles and a minute corona of short bristles on edge of apex; innerside of valve sparsely covered with hairs, outerside well covered with hair-like scales; most of the valve moderately chitinised, more strongly so along the somewhat incurved costa; sacculus rather narrow and weakly chitinised; from middle of valve a broadly based harpe, tapering towards tip, somewhat curved beyond middle and just projecting beyond the costa; ædæagus rather weakly chitinised, most strongly towards tip; vesica with an elongated ridge, beginning near ædæagus, covered with short spines; two broad patches towards tip, densely covered with similar short spines; terminal half of vesica densely covered with minute spines.

Only one species in this genus.

**Charidea elegantissima** Guen. (Fig. 3; pl. V. 1.)

*Charidea elegantissima* Guen., Noct. II. p. 61, pl. 8, f. 12 (1852); Hmps., Cat. Lep. Phal VI. p. 141, fig. 43 (1906); Gaede, Seitz Gross-Schmett XV. p. 59, pl. 7 (1934).

*Exp.* 34—40 mm. *Hab.* Type from the Cape of Good Hope; also recorded from Grahamstown and Portuguese East Africa. In my collection from Cape Colony without precise locality but probably from Cape Town.

**Genus ECTOCHELA** Hmps. (Fig. 4.)

*Ectochela* Hmps., Ann. S. A. Mus. II. p. 279 (1902); Gaede, Seitz Gross-Schmett XV. p. 59 (1934).

Type, *canina* Feld.

Description from *nigrilineata* Gaede.

Proboscis very well developed; palpi obliquely upturned, third joint somewhat porrect, reaching a little beyond frons; first and second joint of almost even length, covered with somewhat appressed scales and fringed with scales and hair-like scales in front; frons smooth, covered with long curved hair-like scales, which meet each other from either side, thus forming a slight ridge and with a tuft of long scales immediately before the antennæ; on either side of this a tuft of curved scales overhanging the middle of the eyes; <sup>1)</sup> vertex loosely tufted with long scales; antennæ of male bifasciculated, of ♀ very shortly ciliated; thorax covered with scales and hair-like scales mixed (Hampson mentions spreading crests on pro- and metathorax,

<sup>1)</sup> This tuft should not be confused with the overhanging cilia found in the typical *Cuculliids* for it is composed of scales which do not spread but stand up, forming a narrow tuft placed vertically to the surface of the eyes and almost reaching the centre of it. For this and other reasons to follow I think this genus is really wrongly placed in the *Cucullix*, perhaps this genus is even identical with *Centrarthra*. I think all the species placed by Gaede and Hampson in *Ectochela*, will ultimately prove to be *Centrarthra*. The following species placed in *Centrarthra* have no tuft overhanging the eye: *albiapicata*, *albogrisea*, *albimotata*, *brevipectinata*, *brunnea*, *fulvinotata*, *fulvitincta*, *furcivitta*, *griseola*, *hexistigma*, *nigrosignata*, *pygmæa*, *serricornis*, *similis* and *vansoni*. The following species, however, have a tuft just as in *nigrilineata*: *albipuncta*, *albistriga*, *argentina*, *cretacea* (tuft very short), *dicksoni*, *modesta*, *monochroma*, *ochrealis*, *ossicolor* and *pallascens*. In *C. dentata* and *C. diffusa* the tuft is a spreading one, but it may be that the overhanging hairs are actually lateral frontal hairs, not corresponding to the typical eyelashes; in *C. pectinata* there are (in the only specimen I have), scales which lie over the eyes, but these may be frontal scales displaced in relaxing.

Considering all these points, and those presented by the male genitalia, I consider this genus not to be a typical *Cuculliud* but nearer to *Centrarthra* if not identical with it.

For descriptions of the species of *Centrarthra* see Janse "Moths of South Africa" volume III pp. 169.—188.

but I fail to find these in my well preserved specimens; the mesothorax, however, has the long hair-like scales converging to the centre, so as to overhang the metathorax and the metathorax has, just beyond base of hindwings, a lateral pencil of long spreading hairs overhanging the base of the abdomen); abdomen without crests, clothed with scales mixed with rather long hair and with lateral hair tufts; femora and tibiae covered with long scales and fringed posteriorly with long hairs; foretibia with a terminal claw pointing outwardly; hindtibia with four spurs, outer spur about half of inner; tarsi with three rows of strong spines. *Forewing*: shape and venation as in *Rhodochlæna* but termen a little more oblique, areole a little wider and R5 a little more remote from the anastomosis of R3 and R4. *Hindwing*: shape as in *Rhodochlæna*, but RS and M1 from a point, M2 more obsolescent and from near middle of DC, M3 and C1 a little closer together.

*Male genitalia*; base of abdomen without lateral coremata; uncus stout, well chitinised, evenly tapering to a fine slightly curved point, somewhat curved before basal half, then straight and tufted with hair above; tergite well chitinised, moderately broad, tufted posteriorly at base with moderate hairs; sternite narrow, well chitinised, ending in a short saccus; anus slightly chitinised ventrally; valve broad at base, suddenly narrowing at one-fourth and undulating, rounded terminally, apical area densely covered with many rows of spines, terminal two-thirds rather weakly chitinised except along costa, inner side sparsely covered with hair, outer side densely covered and fringed with long hairs and hair-like scales; sacculus rather short, well chitinised, and forming a pointed lobe at upper half (this, however, I do not think homologous to the clavus, typically present in the *Cucullids*); from one-third of valve a strongly chitinised somewhat curved harpe, which tapers to a blunt point and is directed to, but hardly reaches, middle of costa; at base of harpe two strong processes, one very long, curved and heavily chitinised, connecting it to base of the sacculus, the other much shorter, broader, and connected with costa beyond base; ædæagus moderately broad, strongly chitinised, terminating in two lobes, the narrow one of which is beset with fine teeth; vesica sub-globular, with five stout cornuti, four of which are very sharply pointed, the fifth and largest bluntly pointed, two of these four are about half the size of the others; most of the vesica finely punctulated.

From this it will be seen that there is hardly any difference in structure of foretibia, venation and male genitalia between *Ectochela nigrilineata* and most species placed in *Centrarthra* and I have no doubt that the genotype of *Ectochela* comes very close to *nigrilineata*, but until I have studied the genotype I leave *Ectochela* provisionally here.

The species placed in this genus by Gaede may be distinguished as follows:

- 1a. Forewing with a pronounced dark shade or fascia below lower median ..... 2
- b. Forewing of a uniform colour without a dark shade or fascia below lower median.<sup>1)</sup> ..... 5
- 2a. Forewing with pale markings at base of C1 and C2 ..... 3
- b. Forewing without pale markings at base of C1 and C2 but with a short white striga at end of cell ..... *roseitincta*
- 3a. Forewing with a yellowish lunule at base of C1 and C3  
*flavilunata*
- b. Forewing with markings at base of C1 and C2 white ..... 4
- 4a. White marking at base of C1 and C2 large, V-shaped; antemedial and postmedial lines fairly distinct ..... *albilineata*
- b. Two small white maculae at base of C1 and C2; antemedial and postmedial lines absent ..... *nigrilineata*
- 5a. Transverse lines very indistinct<sup>1)</sup> ..... *canina*
- b. Transverse lines distinct ..... 6
- 6a. Forewing with a white streak at end of cell (not shown in the figure) ..... *aberrans*
- b. Forewing without a white streak at end of cell ..... *turneri*

***Ectocheila nigrilineata* Gaede (Fig. 4, pl. VI. 3.)**

*Ectocheila nigrilineata* Gaede, D. ent. Zs. Iris, 29, pp. 101—123 (1915)<sup>2)</sup> and in Seitz, Gross-Schmett. XV. p. 59; pl. 7 (1934).

*Exp.* 38—40 mm. *Hab.* Type from South West Africa. In my collection and in that of the Transvaal Museum from Willowmore, (Cape Province), Soebatsfontein, Lekkersing, Brakt-Richtersveld, Hondeklip baai, Pofadder (South West Africa); November 1933.

This species comes close to *canina* Felder, if it is not the same; my female from Willowmore is just like a specimen in the British Museum placed under *canina*, but under that name were other specimens which I consider as being different. I have not seen Felder's type but, according to the figures by Felder and Gaede, my specimens agree best with *nigrilineata*. Seitz's figure of *canina* does not agree at all with Felder's figure, neither does the one given by Hampson. Both Felder's and Gaede's figures leave out the black streak below the cell and the ground-colour in Gaede's figure is grey and not white as given by Felder.

<sup>1)</sup> According to Gaede's figure it is absent in *canina*, in the text he states that it is sometimes absent; according to Felder's and Hampson's figure there is a narrow black line on lower median.

<sup>2)</sup> See footnote for *Ulochlena*.

**Species auctorum.*****Ectochela canina* Feld.**

*Acronycta canina* Feld., Reise Nov. pl. 100, f. 10 (1868).

*Ectochela canina* Hmps., Cat. Lep. Phal. VI. p. 179, f. 48 (1906); Gaede, Seitz Gross-Schmett. XV. p. 59, pl. 7 (1934).

*Exp.* 38—44 mm. *Hab.* Cape Colony, Calvinia district, Uitenhage, Grahamstown.

***Ectochela albilunata* Gaede.**

*Ectochela albilunata* Gaede, D. ent. Zs. Iris, 29, pp. 101—123 (1915); Gaede, Seitz Gross-Schmett. XV. p. 60, pl. 7 (1934).

*Ectochela dasophrys* Tams A. M. N. H. (10) 5, p. 487, pl. XVIII, fig. 3 (1930).

*Exp.* 35 mm. *Hab.* Type from South West Africa, Cape Colony.

***Ectochela flavilunata* Gaede.**

*Ectochela flavilunata* Gaede, D. ent. Zs. Iris, 29, pp. 101—123 (1915); Gaede, Seitz Gross-Schmett. p. 60, pl. 7 (1934).

*Exp.* 39 mm. *Hab.* ♀ Type from South West Africa.

***Ectochela roseitincta* Gaede.**

*Ectochela roseitincta* Gaede, D. ent. Zs. Iris, 29, pp. 101—123 (1915); Gaede, Seitz Gross-Schmett. XV. p. 60, pl. 7 (1934).

*Exp.* 38—42 mm. *Hab.* Type from South West Africa.

***Ectochela aberrans* Gaede.**

*Ectochela aberrans* Gaede, D. ent. Zs. Iris, 29, pp. 101—123 (1915); Gaede, Seitz Gross-Schmett. XV. p. 60, pl. 7 (1934).

*Exp.* 34 mm. *Hab.* ♀ Type from South West Africa.

***Ectochela turneri* Tams**

*Ectochela turneri* Tams, A. M. N. H. (10) 5, p. 488, pl. XVIII, fig. 8 (1930); Gaede, Seitz Gross-Schmett. XV. p. 60 (1934).

*Hab.* Cape Colony.

**Genus CAFFRISTIS Hmps. (Fig. 4.)**

*Caffristis* Hmps., Cat. Lep. Phal. VI. p. 227 (1906); Gaede, Seitz Gross-Schmett. V. p. 60 (1934).

Type, *ferrogrisea*.

Proboscis well developed; palpi obliquely upturned, third joint a little more porrect, reaching just beyond fringes of frons; second joint longer than first joint; third joint very short, covered with appressed scales; first joint mainly covered and fringed with very

long spreading hairs and hair-like scales mixed; second joint tufted with scales on sides, fringed with hair-like scales in front; frons smooth, upper portion with loosely tufted hair-like scales, continued over vertex; eyes with a few overhanging cilia; antennæ of male shortly bipectinated for about half of its length, then gradually becoming dentate; longest pectination a little over diameter of shaft; antennæ in female simple; thorax covered with long scales and hair-like scales mixed (not with hair only, as Hampson states); raised scales on tegulæ and a somewhat raised ridge of scales across patagia and thorax running to base of each forewing, reminding one of a small hood (the meta-thorax, according to Hampson, is supposed to have a spreading crest, but this is hardly visible; from base of mesothorax, however, is a pencil of long hair projecting beyond each patagia); abdomen without crests, covered with scales and each segment thinly fringed with hair, in addition some lateral tufts of hair; femora and tibiæ loosely covered with scales and fringed with hair and hair-like scales posteriorly; foretibia without claw; hindtibia with four spurs; outer spur about half of inner; tarsi covered on inner side with three rows of rather long spines. *Forewing*: shape and venation similar to *Rhodochlæna*, but costa a little incurved at middle, termen a little more oblique and tornus more rounded (quite a different shape to the figure given by Hampson), the areole is a little more elongate and M1 a little more remote from areole. *Hindwing*: similar in shape and venation to that of *Rhodochlæna* but RS and M1 slightly remote or from a point, M3 and C1 shortly stalked.

*Male genitalia*: abdomen without coremata at base; uncus moderately stout, tapering to a somewhat curved point, a little curved at base and somewhat arched at middle; tergite rather narrow and short, weakly chitinised; sternite a little longer but narrower and better chitinised, ending in a short, broad, rounded saccus; anus slightly chitinised below; valve very broad at base, rather short and suddenly tapering towards apex, which is rounded; costa very strongly incurved, termen correspondingly arched, edges of both beset with many long bristly hairs; costal area strongly chitinised and terminating in a raised acuminate process before and loose from tip of valve; sacculus rather narrow, broadest towards middle of valve, where there is a projecting raised lip at tornus; harpe from beyond middle of valve, arising from chitinised costal area and sending a long process to base of sacculus; harpe broad, heavily chitinised, flat, roundly pointed and slightly twisted; inner side of valve sparsely covered with short hairs, outer side with hairs and scales mixed; ædæagus rather weakly chitinised, short and stout, best chitinised at tip, where it is densely covered with very short spines on the underside; manica densely covered with minute protuberances on upper side; juxta with some short bristles on posterior edge; vesica rather



short, bilobate, a larger lobe tipped with an area densely beset with short spines and partly punctulated; basal half of vesica with about 60 irregularly shaped, broadly based, finely pointed cornuti of different size, the smallest being at base and close together.

Only one species in this genus.

***Caffristis ferrogrisea* Hmps. (Fig. 4; pl. V. 2.)**

*Heliophobus ferrogrisea* Hmps., Ann. S. A. Mus. II. p. 442 (1902).

*Caffristis ferrogrisea* Hmps., Cat. Lep. Phal. VI. p. 227, fig. 71 (1906); Gaede, Seitz Gross-Schmett. XV. p. 60. pl. 7 (1934).

*Exp.* 29—31 mm. *Hab.* Type from Masite (Basutoland), also recorded from Maseru. In my collection from Stellenbosch and Pretoria; in February and March.

**Genus EUMICHTIS Hübn. (Fig. 4.)**

*Eumichtis* Hübn., Verz. p. 211 (1822); Hmps., Cat. Lep. Phal. VI. p. 321 (1906); Gaede, Seitz Gross-Schmett. XV. p. 60 (1934).

Type, *lichenæa* from Europe.

Description from *rubrimixta*.

Proboscis well developed; palpi obliquely upturned, reaching a little beyond tuft of frons; second joint a little longer than first joint; third joint less than half of first joint, in female a little longer; all joints loosely scaled, fringed with long hair-like scales in front and on inner side; frons smooth, tufted with hair-like scales, which are longer on vertex; eyes large, rounded, without the overhanging cilia, which are supposed to be present; antennæ in male bifasciculated, in female very shortly biciliated; thorax covered with hair-like scales; a slight crest on pro- and mesothorax, and a large central crest on metathorax, also a short hair-pencil at base of hindwing; abdomen with a crest on first two segments; all segments covered with flat scales and with overhanging hairs from the anterior edge of each segment; a series of lateral hair pencils; femora and tibiæ densely covered and fringed with hair-like scales and hairs mixed; foretibia without a claw; hindtibia with four spurs, of which the middle pair is a little shorter; outer spur about half of inner; tarsi with three rows of short spines.

*Forewing*; of the same shape in the female as in *Rhodochlæna* a little narrower in male: venation as in *Rhodochlæna*, but areole a little longer. *Hindwing*: shape and venation as in *Rhodochlæna* but RS and M1 on a stalk of one-sixth of RS; M2 obsolescent and almost from middle of DC; M3 and C1 from a point.

*Male genitalia*: base of abdomen without coremata; uncus rather narrow, except at base, tapering to a curved point and well arched, fringed with hair on upper side and laterally; tergite rather

narrow, moderately chitinised, more strongly so along the edges, very narrow near uncus, but below uncus provided with a moderately chitinised lobe; sternite longer than tergite, narrow, well chitinised, broadening to a rounded saccus; anus slightly chitinised below; valve sole-shaped and roundly pointed, somewhat incurved at termen and arched at corresponding costa, apical one-fourth weakly chitinised, beset on inner side with stout papillated hairs, which become more dense and bristly towards apex; remainder of valve well chitinised; a rather short sacculus at base without a clavus; harpe broadly based from about middle of valve, strongly chitinised, tapering towards a rounded tip, somewhat incurved and with one broad process attaching it to inner margin and base of sacculus, a short process connecting it with the costal area; ædæagus bulbous at basal half, suddenly narrowing at terminal half, well chitinised; vesica rather long and tubular and with a group of three sharply pointed, broadly based cornuti well beyond base, one of which is smaller than the two others; remote from it, a similar isolated cornutus; at two-thirds length of vesica a very stout, roundly pointed, heavily chitinised, large cornutus which has a very broad oblique base and two rounded ridges before its tip; tip of vesica with a rounded patch densely covered with stout tooth-shaped cornuti, arranged in rows and directed inwardly, gradually diminishing in size towards outer side of patch; terminal half of vesica scobinated, gradually becoming punctulated; opposite the cornuti over the whole length of the vesica inside is a tube, strengthened by somewhat wavy chitinised ridges.

I really think that this species is better placed in the *Acronic-tids* and doubt that it is congeneric with the genotype of *Eumichtis* for, according to Pierce, *lichenea* has a totally differently shaped valve and harpe, the uncus is supposed to have a hollow cap and the vesica is without cornuti but scobinated where it joins the ædæagus. I have no doubt that the identification of my specimens is correct, as the Pretoria female is just like the type and the Pretoria male is just like that female.

***Eumichtis rubrimixta* Hmps. (Fig. 4; pl. V. 4.)**

*Eumichtis rubrimixta* Hmps., Cat. Lep. Phal. VI. p. 347; pl. CIV. fig. 18. (1906); Gaede, Seitz Gross-Schmett. XV. p. 60. pl. 7 (1934).

*Exp.* 36—39 mm. *Hab.* Type from Johannesburg. In my collection from Pretoria and Rietfontein; II., XI., XII.

**Genus HYPOTYPE Hmps. (Fig. 3.)**

*Hypotype* Hmps., Cat. Lep. Phal. VI. p. 384 (106); Gaede, Seitz Gross-Schmett. XV. p. 61 (1934).

Type, *scotamista* Hmps.

Proboscis well developed; palpi obliquely upturned, third joint a

little more porrect, just reaching frons; first and second joint of even length, third joint half that length; first and second joint loosely scaled, fringed in front with hairs and hair-like scales; third joint with more appressed scales; frons smooth, loosely covered with long scales and hair-like scales mixed; vertex even more roughly covered with scale-like hairs; overhanging cilia fairly distinct, spreading and covering one-third of eyes; antennæ simple with minute cilia, first joint with a tuft of scales in front; tegulæ covered with scales, somewhat erected at middle, so as to form a small hood; patagia and remainder of thorax covered with scales and scale-like hairs mixed and without crests; first abdominal segment with a distinct crest; abdomen covered with scales, each segment thinly fringed with moderate hairs inserted on anterior edge, also some lateral fringes of hairs and scales mixed; femora and tibiæ covered with scales and densely fringed posteriorly and laterally with long hairs; underside of thorax and base of abdomen densely covered with woolly hair; foretibia without a claw; hindtibia with two pairs of long spurs; outer spur two-thirds of inner; tarsi with three rows of stout spines. *Forewing*: in shape somewhat like the typical *Cucullia* but costa at apex less arched, termen more erect, tornus more rounded; venation similar to that of *Cucullia*, but areole somewhat longer, R5 from end of areole and M1 somewhat remote from areole. *Hindwing*: as in *Cucullia*, but M2 much stronger developed, termen even slightly crenulate at that vein, and C1 from a little before angle.

*Male genitalia*: base of abdomen without lateral coremata; uncus stout, strongly curved at base, then straight and suddenly tapering into a curved point, well chitinised; upper terminal half well covered with long hairs; from about middle of uncus a lateral lobe on each side, which also seems to be well chitinised and which is densely covered with very short bluntly pointed bristles; tergite rather narrow, of even width, suddenly tapering to a rounded point, well chitinised, strongly so along anterior edge, posterior edge fringed with long hair; sternite rather narrow, ending in a very short saccus, well chitinised; anus somewhat chitinised below valve, moderately broad, suddenly contracting beyond middle, somewhat expanding towards tip, which is truncate and provided with a corona consisting of very long somewhat curved, rather separated bristles; terminal two-thirds of valve, except along inner margin, rather weakly chitinised, remainder well chitinised; inner side of weakly chitinised portion densely covered with long hairs, outer side of terminal half of valve densely covered with very long hairs; sacculus rather long and a little over half of width of valve and provided beyond its base with a broad, rounded-off, well chitinised clavus; sacculus itself terminating on upper side in a somewhat short rounded lobe, which has several crinkles over it, remainder of sacculus merging into the

heavily chitinised inner margin, from which originates a short slightly chitinised finger-shaped process (this may represent the harpe); from before middle of costa another heavily chitinised process, which is strongly curved at base, then incurved and rounded off terminally (this process may be the harpe and is somewhat longer in the right valve, as is also the case with the smaller process previously mentioned); the right valve further differs from the left valve in having an additional broad process, originating from middle of valve and projecting beyond the costa; at tornus the inner marginal area is somewhat produced and heavily chitinised and appears to be separated from the less chitinised terminal area by being twisted inwardly; in the right valve the terminal part is broader than in the left valve; juxta very long, well chitinised, gradually merging into the manica, which is finely punctulated on the upper side, crinkled below; ædœagus long, narrow at basal half, gradually becoming much wider at terminal end, where it gradually merges into the rather short vesica; a little beyond base of vesica five irregularly shaped cornuti, of which two are minute; at tip of vesica two very stout, heavily chitinised long cornuti, one of which is longer and very broadly based, both cornuti seem to be connected to each other by means of a chitinised area of the vesica (similar to the large cornutus found in *Neocucullia albisignata*); a chitinised ridge, connected with base of largest cornutus, apparently attached to the whole of the vesica, which is there somewhat chitinised.

Three species have been placed in this genus, one of which is from Palestine. The two African species may be distinguished as follows;

- a. Forewing with a black streak below base of cell; orbicular large, rounded; subterminal line represented by a series of black dentate marks, with a whitish suffusion beyond them, slightly angled outwardly at R5 and inwardly in submedian fold; a short black streak on extremity of C2 ..... *nigridentata*
- b. Forewing without a black streak below base of cell; orbicular a small pale ocellus; subterminal line very indistinct, whitish, defined by fuscous on inner side, somewhat dentate on veins R5 and M1 and excurved at middle; no black streak on extremity of C2 ..... *scotomista*

**Hypotype *scotomista* Hmpsn. (Fig. 3; pl. V. 3.)**

*Polia scotomista* Hmpsn., Ann. S. A. Mus. II. p. 278 (1902).

*Hypotype scotomista* Hmpsn., Cat. Lep. Phal. VI. p. 386, fig. 128 (1906); Gaede, Seitz Gross-Schmett. XV. p. 61 (1934).

*Exp.* 40—45 mm. *Hab.* Type from Cape Town; also recorded from Coast belt of Natal and Kokstad (Cape Colony); in my collection from Durban in February.

**Species auctorum****Hypotype nigridentata** Hmps. n.

*Polia nigridentata* Hmps. n., Ann. S. Afr. Mus. II p. 278 (1902).

*Hypotype nigridentata* Hmps. n., Cat. Lep. Phal. VI. p. 385, pl. CV. fig. 6 (1906); Gaede, Seitz Gross-Schmett. XV. p. 61, pl. 7 (1934).

*Exp.* 44 mm. *Hab.* Type from Transkei (Cape Colony).

**Genus GRAMNOSCELIS** Hmps. n.

*Gramnoscelis* Hmps. n., Cat. Lep. Phal. VI. p. 468 (1906); Gaede, Seitz Gross-Schmett. XV. p. 61 (1934).

Type *leuconeura*.

**Gramnoscelis leuconeura** Hmps. n.

*Gramnoscelis leuconeura* Hmps. n., Cat. Lep. Phal. VI. p. 468, fig. 160 (1906); Gaede, Seitz Gross-Schmett. XV. p. 61, pl. 7 (1934).

*Exp.* 30 mm. *Hab.* Male type from Deelfontein (Cape Colony).

Only one female in my collection from Graaf Reinet.

I hope to be able to give the male genitalia at some future date when material becomes available.

**Genera et species auctorum.****Genus RHIZOTYPE** Hmps. n.

*Rhizotype* Hmps. n., Cat. Lep. Phal. VI p. 373 (1906); Gaede, Seitz Gross-Schmett. XV. p. 60 (1934).

Type, *flammea* from Europe.

One species in South Africa.

**Rhizotype palliata** Warr.

*Rhizotype palliata* Warr., Ann. S. A. Mus. X. p. 469, pl. XL. f. 2 (1914).

*Exp.* 40 mm. *Hab.* Hout bay (Cape Colony).

**Genus DASYPOLIA** Guen.

*Dasypolia* Guen., Noct. II. p. 44 (1852); Hmps. n., Cat. Lep. Phal. VI. p. 422 (1906); Gaede, Seitz Gross-Schmett. XV. p. 61 (1934).

Type *templi* from Europe.

Only one species recorded from South Africa.

**Dasypolia informis** Wlk.

*Dasypolia informis* Wlk., Cat. X. p. 402 (1856); Hmps. n., Cat. Lep. Phal. VI. p. 423, fig. 146 (1906); Gaede, Seitz Gross-Schmett. XV. p. 1, pl. 7 (1934).

*Exp.* 40 mm. *Hab.* Type from "Interior of S. Africa". I have not come across this species yet, although it is readily recognised.

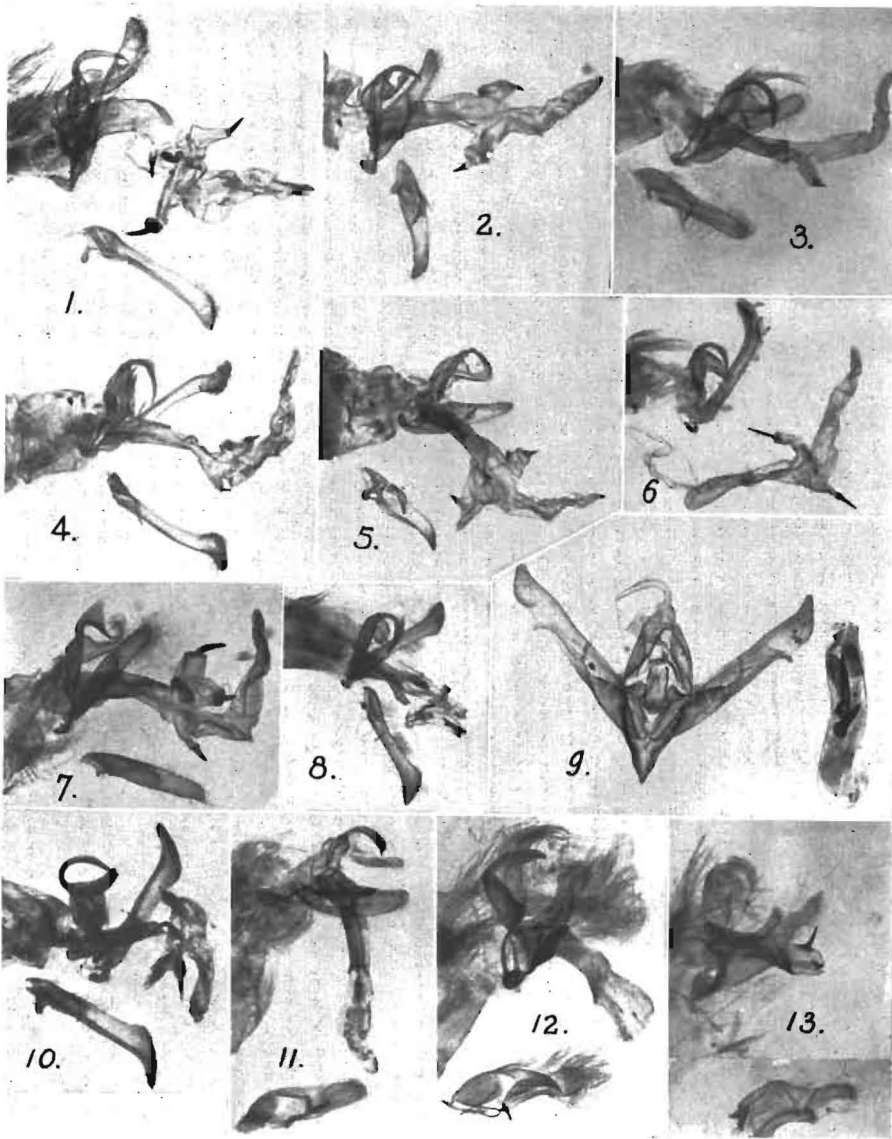


Photo Janse.

Male genitalia of: 1. *Cucullia brunnea* x 8; 2. *Cucullia perstriata* x 4; 3. *Cucullia extricata* x 4; 4. *Cucullia terreusis* x 4; 5. *Cucullia atrimacula* x 4; 6. *Cucullia minuta* x 4; 7. *Empusada hutchinsoni* x 4; 8. *Empusada argentivitta* x 4; 9. *Empusada chrysota* x 8; 10. *Empusada pallidistria* x 4; 11. *Rhodochlæna boton-ga* x 8; 12. *Leucochlæna leucogonia* x 8; 13. *Ulochlæna fumea* x 8.

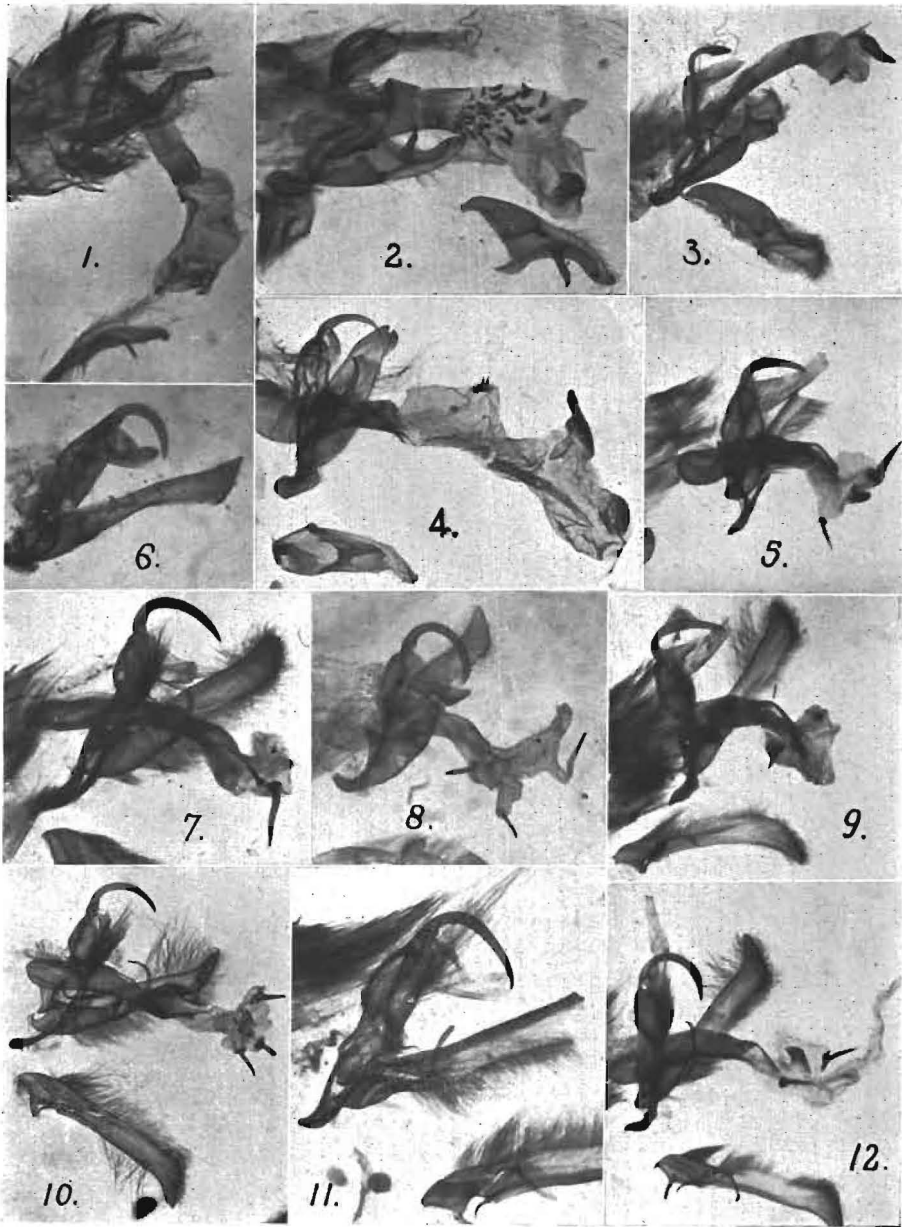


Photo Junse.

Male genitalia of: 1. *Caridea elegantissima* x 8; 2. *Caffristis ferrogrisea* x 8; 3. *Hypotype scotomista* x 4; 4. *Eumichtis rubrimixta* x 8; 5. *Cucullia albifuscata* x 8; 6. *Cucullia nigrilinea* x 8; 7. *Cucullia platti* x 8; 8. *Cucullia pallidicolor* x 8; 9. *Cucullia consimilis* x 8; 10. *Cucullia inæqualis* x 8; 11. *Cucullia dædalis* x 8; 12. *Copicullia ruptifascia* x 8.

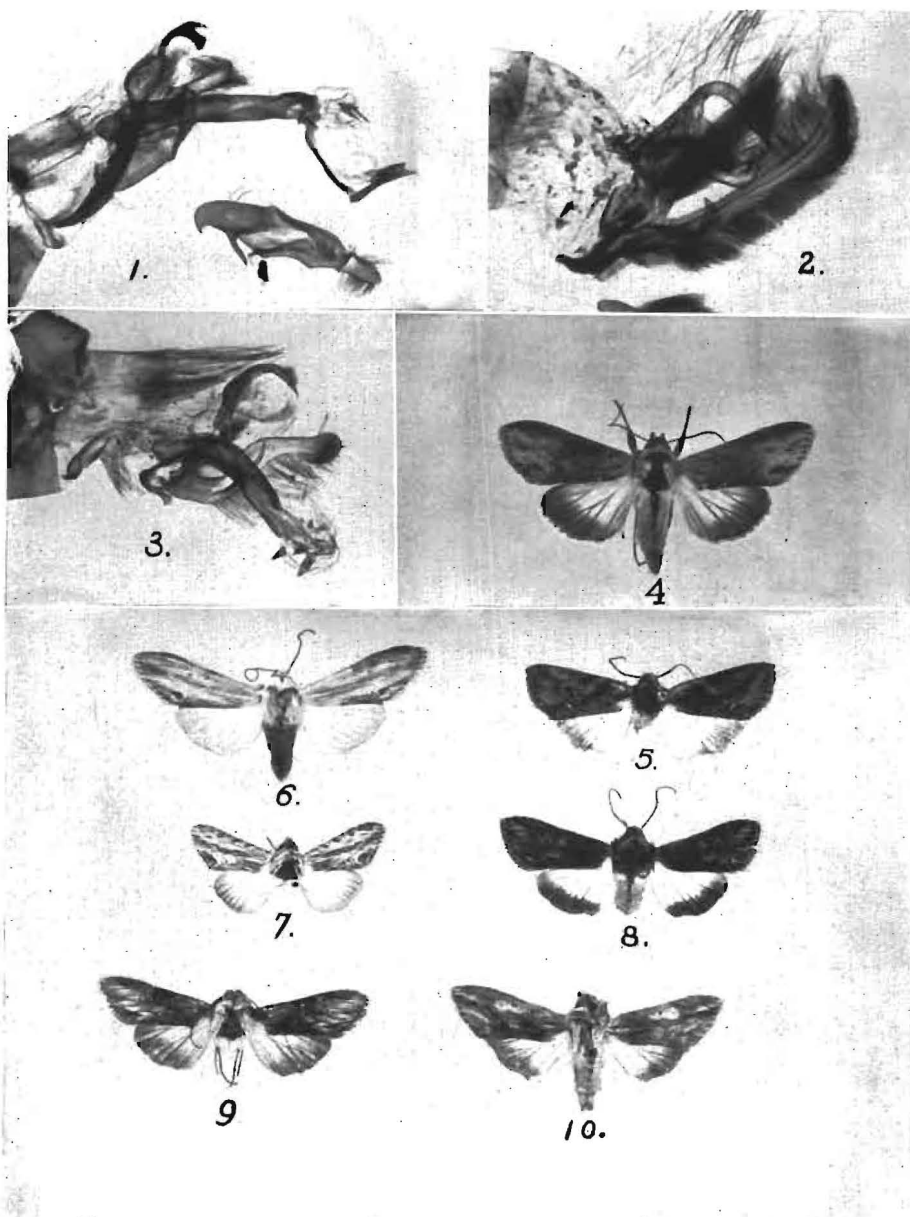


Photo Janse.

Male genitalia of: 1. *Neocucullia albisignata* x 8; 2. *Cucullia artemisiæ* x 8; 3. *Ectocheila nigrilineata* x 8.

Moths at natural size of: 4. *Cucullia platti* Prout ♀; 5. *Neocucullia albisignata* spec. nov. ♂ type; 6. *Cucullia pallidicolor* spec. nov. ♂ type; 7. *Cucullia albifusca* spec. nov. ♂ type; 8. *Cucullia inæqualis* spec. nov. ♀ type; 9. *Cucullia nigrilinea* spec. nov. ♂ type; 10. *Cucullia dædalis* spec. nov. ♀ type.